

*DOT P 1945.1B*  
*September 1979*

*Glossary of Terms  
& Abbreviations*

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***Transportation  
Preparedness  
Planning***

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**U.S. Department of Transportation**  
Research and Special Programs Administration  
Washington, D.C.



PREFACE

The purpose of this pamphlet is to provide the transportation planner with a single reference source for commonly used abbreviations and definitions of technical terminology used in civil transportation emergency planning. Through the use of this pamphlet, it is hoped that a higher degree of communication and mutual understanding can be achieved throughout the transportation community.

Since its initial publication in November 1968, and its revisions in 1971 and 1974, numerous changes in organizations, terms, and abbreviations have occurred. Therefore, in the interest of providing the transportation community with a document that is current and reflects present day terminology as well as anticipates future usage, a third revision has been necessary. To accomplish this, the assistance of the entire transportation community was solicited. Their excellent response is hereby acknowledged.

Suggestions for additions or changes along with appropriate reference to source material for inclusion in future revisions should be addressed to: Director of Emergency Transportation (DPB-30), Research and Special Programs Administration, Department of Transportation, Washington, D. C. 20590.



Director of Emergency Transportation  
Department of Transportation



TABLE OF CONTENTS

<u>CHAPTER 1. ABBREVIATIONS</u>	<u>Page No.</u>
a. FEDERAL AGENCIES	101
b. NORTH AMERICAN TREATY ORGANIZATIONS (NATO)	107
c. JOINT U.S./CANADA ORGANIZATIONS (US/CAN)	112
d. FEDERAL EMERGENCY ORDERS AND PLANS	112
e. MISCELLANEOUS	113
<u>CHAPTER 2. DEFINITIONS</u>	201
<u>CHAPTER 3. WORLD-WIDE TIME INDICATORS</u>	301
<u>CHAPTER 4. METRIC CONVERSION TABLES</u>	
a. BASIC METRIC UNITS	401
b. CONVERSION FACTORS	
LINEAR AND SQUARE MEASURES	402
CUBIC MEASURES	403
WEIGHTS, POWER AND HEAT UNITS	404
c. APPROXIMATE CONVERSION FACTORS	
TO METRIC MEASURES	405
FROM METRIC MEASURES	406
<u>CHAPTER 5. CHART SCALES AND EQUIVALENTS</u>	501
<u>SUPPLEMENTAL SHEET FOR ADDITIONAL TERMS AND ABBREVIATIONS</u>	601

DISTRIBUTION:

Civil Aeronautics Board  
Emergency Coordinator

Department of Commerce  
Emergency Coordinator  
Maritime Administration  
Emergency Planning Officer  
National Oceanic and Atmospheric Administration  
Emergency Services Office

Department of Defense  
Emergency Coordinator  
Director for Transportation and Distribution Policy (MRA&L)  
Emergency Transportation Coordinator  
Commander, Military Airlift Command  
Attention: XPW  
Commander, Military Sealift Command  
Attention: M-6  
Commander, Military Traffic Management Command  
Attention: PLE  
Chief of Engineers, U.S. Army  
Attention: Civil Works Division  
Commandant, U.S. Army Transportation School  
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U.S. NATO Civil Emergency Planning Officer

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Regional Emergency Transportation Coordinators  
Mobilization Designees  
Members, National Defense Executive Reserve -  
Office of the Secretary of Transportation Unit





CHAPTER 1. ABBREVIATIONSa. Federal Agencies

AEC	- Atomic Energy Commission (Obsolete, see DOE and NRC)
BCABP	- Bureau of Competitive Assessment and Business Policy, ITA, DOC
BDC	- Bureau of Domestic Commerce, DOC (Obsolete, see BTR)
BDSA	- Business and Defense Services Administration, DOC (Obsolete, see ITA)
BTR	- Bureau of Trade Regulation (DOE)
CAB	- Civil Aeronautics Board
CIA	- Central Intelligence Agency
COE(CW)	- U.S. Corps of Engineers (Civil Works), DOD
CSA	- Community Services Administration
CSC	- Civil Service Commission (Obsolete, See OPM and MSPB)
DCPA	- Defense Civil Preparedness Agency, DOD (obsolete, see FEMA)
DEPA	- Defense Electric Power Administration, DOI (obsolete, see EEPA)
DHEW	- Department of Health, Education and Welfare
DHUD	- Department of Housing and Urban Development
DIBA	- Domestic and International Business Administration, DOC (obsolete, see ITA)
DLA	- Defense Logistics Agency, DOD
DOA	- Department of Agriculture
DOC	- Department of Commerce
DOD	- Department of Defense
DOE	- Department of Energy

DOI - Department of the Interior

DOL - Department of Labor

DOT - Department of Transportation

DOT EO - Department of Transportation Emergency Organization

DPB - Transportation Programs Bureau (RSPA/DOT)

DSA - Defense Supply Agency, DOD (Obsolete, see DLA)

EEPA - Emergency Electric Power Administration (DOE)

EMA - Emergency Minerals Administration, DOI

EOP - Executive Office of the President

EPA - Environmental Protection Agency

EPGA - Emergency Petroleum and Gas Administration (DOE)

ERDA - Energy Research and Development Administration (Obsolete, see DOE)

ESA - Economic Stabilization Administration (FPA, GSA)

ESFA - Emergency Solid Fuels Administration (DOE)

FAA - Federal Aviation Administration (DOT)

FCC - Federal Communications Commission

FDAA - Federal Disaster Assistance Administration, DHUD (Obsolete, see FEMA)

FEA - Federal Energy Administration (Obsolete, See DOE)

FEMA - Federal Emergency Management Agency

FEO - Federal Energy Office, OEP (Obsolete, see DOE)

FERC - Federal Energy Regulatory Commission (DOE)

FHWA - Federal Highway Administration (DOT)

FMCS - Federal Mediation and Conciliation Service (DOL)

FPA - Federal Preparedness Agency, GSA (Obsolete, see FEMA)

FPC - Federal Power Commission (Obsolete, See FERC, DOE)

FRA - Federal Railroad Administration (DOT)

GSA - General Services Administration

GSA/OP - See OP/GSA (Obsolete, see FPA)

ICA - International Communications Agency

ICC - Interstate Commerce Commission

ITA - Industry and Trade Administration (DOC)

JCS - Joint Chiefs of Staff (DOD)

MAC - Military Airlift Command (DOD)

MARAD - Maritime Administration (DOC)

MSC - Military Sealift Command (DOD)

MSPB - Merit Systems Protection Board

MTB - Materials Transportation Bureau (RSPA/DOT)

MTMC - Military Traffic Management Command (DOD)

MTMTS - Military Traffic Management and Terminal Service (DOD)  
(Obsolete, see MTMC)

NASA - National Aeronautics and Space Administration

NHTSA - National Highway Traffic Safety Administration (DOT)

NLRB - National Labor Relations Board (DOL)

NMB - National Mediation Board (DOL)

NOAA - National Oceanic and Atmospheric Administration (DOC)

NRC - Nuclear Regulatory Commission

NSA - National Shipping Authority (MARAD/DOC)

NSC - National Security Council

NTIA	- National Telecommunications and Information Agency (DOC)
NTSB	- National Transportation Safety Board
OCD	- Office of Civil Defense (DOD) (Obsolete, see FEMA)
ODR	- Office of Defense Resources (FEMA)
OEO	- Office of Economic Opportunity (EOP)
OEP	- Office of Emergency Preparedness (EOP) (Obsolete, see FEMA)
OET	- Office of Emergency Transportation (RSPA/DOT)
OMB	- Office of Management and Budget (EOP)
OP	- Office of Preparedness (GSA) (Obsolete, see FEMA)
OP/GSA	- Office of Preparedness (GSA) (Obsolete, see FEMA)
OPM	- Office of Personnel Management
OST	- Office of the Secretary of Transportation (DOT)
OSTP	- Office of Science and Technology Policy
PHS	- Public Health Service (DHEW)
RRB	- Railroad Retirement Board (DOL)
RSPA	- Research and Special Programs Administration (DOT)
SBA	- Small Business Administration (DOC)
SLS	- Saint Lawrence Seaway Development Corporation (DOT)
SSS	- Selective Service System
TVA	- Tennessee Valley Authority
UMTA	- Urban Mass Transportation Administration (DOT)
USA	- United States Army (DOD)
USAF	- United States Air Force (DOD)
USCG	- United States Coast Guard (DOT)

USDA	- United States Department of Agriculture
USMC	- United States Marine Corps (DOD)
USN	- United States Navy (DOD)
USPHS	- United States Public Health Service (DHEW)
USPS	- United States Postal Service
USRA	- United States Railroad Association
VA	- Veterans Administration



b. North Atlantic Treaty Organization (NATO)

ACE	- Allied Command Europe
ACLANT	- Allied Command Atlantic
ACP	- Allied Command Publication
ACSA	- Allied Communication Security Agency
ACTICE	- Agency for the Coordination of Inland Surface Transport in Central Europe
ACTIMED	- Agency for the Coordination of Inland Surface Transport in the Mediterranean
ACTISUD	- Agency for the Coordination of Inland Surface Transport in Southern Europe
AFCENT	- Allied Forces Central Europe
AFNORTH	- Allied Forces Northern Europe
AFSOUTH	- Allied Forces Southern Europe
ALLA	- Allied Long Line Agency
APOD	- Aerial Ports of Debarkation
ASACS	- Air Surveillance and Control System
ATC	- Air Traffic Control
ATS	- Air Traffic Service
ATMG	- Airspace and Traffic Management Group
AVAILAIR	- Available Airlift Report
BENELUX	- Belgium, Netherlands and Luxembourg
BOCCA	- Board for the Coordination of Civil Aviation
CAPC	- Civil Aviation Planning Committee
CAT	- Container Anchorages Terminal
CCA	- Complementary Civil Activities

CCCC	- Cross Channel Coordination Center
CCMG	- Combined Container Movement Coordinating Group (PBOS)
CCPC	- Civil Communication Planning Committee
CDC	- Civil Defense Committee
CEAC	- Committee on European Airspace Coordination
CE	- Central Europe
CENSHADCOM	- Central Shipping Advisory Committee
CEOA	- Central Europe Operating Agency
CEP	- Civil Emergency Planning
CEPO	- Central European Pipeline Office
CEPPC	- Central European Pipeline Policy Committee
CEPQ	- Civil Emergency Planning Questionnaire
CEPS	- Central European Pipeline System
CFL	- Luxembourg Railways
CIMIC	- Civil/Military Cooperation
CIVNARAT	- Format for Airlift Requests
CIVSITREP	- Civil Situation Reporting System
COEC	- Council Operations and Exercise Committee
COMCEN	- Communications Center
CPT	- Central Planning Team
CSA	- Central Supply Agency (E-East) (W-West)
CTS	- Cosmic Top Secret
DB	- German Federal Railway
DNS	- Direct NICS Subscriber
DPC	- Defense Planning Committee



DSA	- Defense Shipping Authority
DSB	- Danish State Railways
DSC	- Defense Shipping Council
DSEB	- Defense Executive Shipping Board
ESA	- European Supply Agency
EANPG	- European Air Navigation Planning Group
ECAC	- European Civil Aviation Conference
FAPC	- Food and Agriculture Planning Committee
FS	- Italian State Railways
GATT	- General Agreement on Tariffs and Trade
GOS	- Grade of Service
HILEX	- High Level Exercise
IIO	- International Insurance Organization
IMS	- International Military Staff
INS	- Indirect NICS Subscribers
IPC	- Industrial Planning Committee
IS	- International Staff
ISO	- International Standardization Organization
IVSN	- Initial Voice Switch Network
IWT	- Inland Waterways Transport
JMCC	- Joint Movements Coordination Center
JOS	- Joint Operational Staff of NW00 (East and West)
LOC	- Line of Communication
MAS	- Military Agency for Standardization
MC	- Military Committee

MESG	- Mediterranean Shipping Group
MNC	- Major NATO Command
MSC	- Major Subordinate Command
NAC	- North Atlantic Council
NAMSA	- NATO Maintenance and Supply Agency
NCSORG	- Naval Control of Shipping Organization
NCWA	- NATO Civil Wartime Agency
NE	- Northern Europe
NETSO	- Northern Europe Transshipment Organization
NICS	- NATO Integrated Communication System
NICSMA	- NATO Integrated Communication System Management Agency
NOCC	- NATO Oil Crisis Contingent
NOEB	- NATO Oil Executive Boards (East and West)
NORAM	- National Reinforcement Allocation Model
NOTAM	- Notice to Airmen
NRA	- NATO Refugee Agency
NS	- Dutch Railways
NSDR	- National Ships Destination Room
NWOO	- NATO Wartime Oil Organization
OCA	- Operational Control Authority (Element of NCSORG)
OECD	- Organization for Economic Cooperation and Development
OPCON	- Operational Control
PB&Cs	- Planning Boards and Committees
PBEIST	- Planning Board for European Inland Surface Transport

PBOS	- Planning Board for Ocean Shipping
POL	- Petroleum Oil and Lubricants
PPC	- Petroleum Planning Committee
PTT	- Postal and Telecommunications Public Service
RRC	- Rapid Reinforcement Concept
RRT	- Railroad Transport
RSB	- Regional Shipping Boards (East and West)
RT	- Road Transport
SACEUR	- Supreme Allied Commander, Europe
SACLANT	- Supreme Allied Commander, Atlantic
SCEPC	- Senior Civil Emergency Planning Committee
SE	- Southern Europe
SESG	- Southern European Shipping Group
SHADCOM	- Shipping Advisory Committee
SHAPE	- Supreme Headquarters Allied Powers, Europe
SITCEN	- Situation Center
SMC	- Staff Message Control
SNCB	- Belgian Railways
SNCF	- French Railways
SOFA	- Status of Forces Agreement
SOP	- Standard Operating Procedures
STC	- SHAPE Technical Center
TARE	- Telegraph Automatic Relay Equipment
TR	- Terms of Reference

c. Joint U.S./Canada Organization (US/CAN)

- CCEEP - U.S./Canada Committee for Coordination of Emergency Economic Planning (FEMA)
- CEPC - Joint U.S./Canada Civil Emergency Planning Committee (FEMA)
- EPCCT - U.S./Canada Emergency Planning Committee for Civil Transportation (OET/DOT)
- EMO - Emergency Measures Organization (Canada) (Obsolete, see NEPE)
- MOT - Ministry of Transport (Canada)
- NEPE - National Emergency Planning Establishment (Canada)
- REGHQ - Regional Emergency Government Headquarters
- TR - Terms of Reference

d. Federal Emergency Orders and Plans

- BPR-THM - Bureau of Public Roads - Transport Highway Mobilization Standby Order, FHWA/DOT (Obsolete, see ESO-FHWA)
- CAB-ATM - Civil Aeronautics Board Air Transport Mobilization Standby Order
- CARDA - Continental United States Airborne Reconnaissance For Damage Assessment Plan
- DOTCOOP - Department of Transportation Continuity of Operations Plan
- DMO - Defense Mobilization Order
- EHTR - Emergency Highway Traffic Regulation (FHWA/DOT)
- ESO-FHWA - Federal Highway Administration Emergency Standby Order (DOT)
- ICC-TM - Interstate Commerce Commission Transport Mobilization Standby Order
- OSTCOOP - Office of the Secretary of Transportation Continuity of Operations Plan

- SARDA - State and Regional Disaster Airlift (FAA/DOT)
- SCATANA - Security Control of Air Traffic and Air Navigation Aids (DOT/DOD/FCC)
- WASP - Wasp Air Service Program (CAB)

e. Miscellaneous

- A-BDIS - Automated Service B Data Interchange System (FAA/DOT)
- ACDO - Air Carrier District Office (FAA/DOT)
- ADE - Air Defense Emergency
- AFTN - Aeronautical Fixed Telecommunications Network (FAA/DOT)
- AIG - Addressee Indicator Group
- ALCKTS - All Circuits (FAA/DOT)
- ALFOF - All Field Offices (FAA/DOT)
- AMB - Aircraft Maintenance Base
- AMTRAK - American Track/National Railroad Passenger Service Corporation
- ANRC - American National Red Cross
- ARSR - Air Route Surveillance Radar (FAA/DOT)
- ASD(I&L) - Assistant Secretary of Defense (Installations and Logistics) (DOD) (Obsolete, see ASD(MRA&L))
- ASD(MRA&L) - Assistant Secretary of Defense (Manpower, Reserve Affairs and Logistics)
- ATCSCC - Air Traffic Control Systems Command Center (Washington) (FAA/DOT)
- ATCT - Air Traffic Control Tower (FAA/DOT)
- BTN - Brussels Nomenclature
- CAP - Civil Air Patrol
- CARDA - Continental U.S. Airborne Reconnaissance for Damage Assessment (FAA/DOT)

CARF	- Central Altitude Reservation Facility (FAA/DOT)
CCC	- Customs Cooperation Council - Communications Control Center (FAA/DOT)
CDNARS	- Civil Defense National Radio System (FEMA)
CDNATS	- Civil Defense National Teletype System (FEMA)
CDNAVS	- Civil Defense National Voice System (FEMA)
CDWS	- Civil Defense Warning System
CERAP	- Center Radar Approach (FAA/DOT)
CONRAIL	- Continental Railroad Corporation
CONUS	- The Forty-eight Contiguous States
COOP	- Continuity of Operations Plan
COTP	- Captain of the Port (USCG/DOT)
CRAF	- Civil Reserve Air Fleet (DOT-DOD)
CRP	- Crisis Relocation Planning (FEMA)
CS/T	- Combined Station/Tower (FAA/DOT)
DEFCON	- Defense Readiness Condition (DOD)
DWIC	- Disaster Welfare Inquiry Center
DWT	- Deadweight Tonnage
EAP	- Emergency Action Procedures (DOD)
EFD	- Exercise and Facilities Division, OP/GSA (Obsolete, see SOD)
EMDO	- Engineering and Manufacturing District Office (FAA/DOT)
EO	- Executive Order
EOC	- Emergency Operating Center (Obsolete, see EOF)
EOF	- Emergency Operating Facility

EOS	- Emergency Operations Simulation
ESFO	- Engineering Support Field Office (Disaster)
ESO	- Emergency Standby Orders (FHWA/DOT)
FAEOF	- First Alternate Emergency Operating Facility - Site B
FAPC	- First Area Port Controller (MARAD/DOC)
FAR	- Federal Aviation Regulation (FAA/DOT)
FCG	- Field Coordination Group
FCO	- Federal Coordinating Officer (Disaster)
FIDO	- Flight Inspection District Office (FAA/DOT)
FIFO	- Flight Inspection Field Office (FAA/DOT)
FLCO	- Federal Local Port Controller
FRC	- Federal Regional Center - Federal Regional Council
FRRA	- Federal Regional Reconstitutional Area
FSDO	- Flight Standards District Office (FAA/DOT)
FSNFO	- Flight Standards National Field Office (FAA/DOT)
FSS	- Flight Service Station (FAA/DOT)
GAA	- General Agency Agreement
GADO	- General Aviation District Office (FAA/DOT)
GENOT	- General Notice (FAA Headquarters/DOT)
HAWAS	- Hawaii Warning System (FEMA)
IACA	- International Air Carrier Association
IATA	- International Air Transportation Association
IATSC	- International Aeronautical Telecommunications Switching Center (FAA/DOT)

ICAO	- International Civil Aviation Organization
ICIS	- Interdepartmental Committee on Internal Security
IECG	- Interagency Emergency Coordinating Group
IEPB	- Interagency Emergency Planning Board
IEPC	- Interagency Emergency Planning Committee
IETC	- Interagency Emergency Transportation Committee (OET/DOT)
IGIA	- Interagency Group on International Aviation
IRAP	- Interagency Radiological Assistance Plan
JCS	- Office of the Joint Chiefs of Staff (DOD)
HFSSB	- High Frequency/Single Side Band (FAA/DOT)
LERTCONS	- Alert Conditions
LPG	- Liquified Petroleum Gas
LSFO	- Logistics Support Field Office (Disaster)
L/T	- Long Ton (2240 lbs)
M/T	- Measurement Ton (40 cubic feet)
MAS	- Military Alert System
MAST	- Military Assistance for Safety and Traffic
MAT	- Mobile Assistance Team (Disaster)
MCL	- Mathematics and Computation Laboratory (FEMA)
MEECN	- Minimum Essential Emergency Network (DOD)
MERZONE	- Merchant Ship Control Zone
MOU	- Memorandum of Understanding
MRO	- Maintenance, Repair and Operations
MSE	- Modern Ship Equivalent



NAFEC	- National Aviation Facilities Experimental Center (FAA/DOT)
NAS	- National Airspace System
NATCOM	- FAA National Communications Center
NAWAS	- National Warning System (FEMA)
NCA	- National Command Authorities (DOD)
NCP	- Nuclear Civil Protection (Planning)
NCS	- National Communications System
NCSORG	- Naval Control of Shipping Organizations
NDRF	- National Defense Reserve Fleet (MARAD/DOC)
NDTA	- National Defense Transportation Association
NEIC	- National Earthquake Information Center (NOAA/DOC)
NETC	- National Emergency Transportation Center
NDER	- National Defense Executive Reserve
NHIC	- National Hurricane Center (NOAA/DOC)
NMCC	- National Military Command Center (DOD)
NMCS	- National Military Command System (DOD)
NMFC	- National Motor Freight Classification
NORAD	- North American Air Defense (DOD)
NUDET	- Nuclear Detonation (used in training exercises)
OES	- Office of Emergency Service (Disaster)
ORA	- Office of Resource Analysis, OP/GSA (Obsolete)
PAD	- Public Assistance Director (Disaster)
PEAD	- Presidential Emergency Action Document
PEOF	- Primary Emergency Operating Facility - Site A

PL	- Public Law
RENOT	- Regional Notice (FAA/DOT)
RERP	- Radiological Emergency Response Planning
RETC	- Regional Emergency Transportation Center
RETCO	- Regional Emergency Transportation Coordinator (OET/DOT)
RETREP	- Regional Emergency Transportation Representative (OET/DOT)
RIETCOM	- Regional Interagency Emergency Transportation Committee (OET/DOT)
RPC	- Regional Preparedness Committee
RRC	- Rescue Coordination Center
SA	- Salvation Army (Disaster)
SAD	- Survival Assistance Director (Disaster)
SAEOF	- Second Alternate Emergency Operating Facility - Site C
SAR	- Search and Rescue
SARDA	- State and Regional Disaster Airlift (FAA)
SCATANA	- Security Control of Air Traffic and Air Navigation Aids (DOT-DOD-FCC)
SCO	- State Coordinating Officer (Disaster)
SECREP	- Regional Representative of the Secretary of Transportation
SEC/TRANS	- The Secretary of Transportation
SFRCC	- Standard Federal Regional Council City
SIC	- Standard Industrial Classification
SITC	- Standard International Trade Classification
SITCR	- Standard International Trade Classification (Revised)
SIOP	- Single Integrated Operational Plan (DOD)

SITREP	- Situation Report
SMSA	- Standard Metropolitan Statistical Area
SOD	- Special Operations Division (Obsolete, See WV00)
SS	- Priority Designation for a Distress and Urgency Message (FAA/DOT)
S/T	- Short Ton (2000 lbs.)
STCC	- Standard Transportation Commodity Code
TAPAC	- Transportation Allocations, Priorities and Controls Committee
TCC	- Transportation Commodity Classification Code
TDCC	- Transportation Data Coordinating Committee
TOA	- Transportation Operating Agency
TRACON	- Terminal Radar Control (FAA/DOT)
TSFO	- Transportation Support Field Office (Field)
UCC	- Uniform Classification Committee
UFC	- Uniform Freight Classification
UFRCC	- Uniform Federal Regional Council City
USAICA	- United States Army Interagency Communications Agency
USRA	- United States Railway Association
UTAP	- Unified Transportation Assistance Program (DOT)
WASP	- War Air Service Program (FAA)
WAWAS	- Washington Area Warning System (FEMA)
WHCA	- White House Communications Agency
WWMCCS	- World Wide Military Command and Control System (DOD)
WV00	- Western Virginia Operations Office (FEMA)

Z or Z

- Suffix added to time reference to indicate Greenwich Mean Time - GMT (mean solar time at the meridian of Greenwich, England); the basis for standard time used throughout most of the world. Often referred to as Zulu time. (See Chapter 3.)

## CHAPTER 2. DEFINITIONS

Following are definitions of words and terms used in planning to meet various emergency situations and do not necessarily apply to general usage.

Action Plan (Crisis Management): A plan which summarizes the resource supply and demand situation of a portending crisis, sets forth the series of steps that can be taken by Government agencies to prevent or resolve problems, including those to induce private sector action in meeting the crisis, and which provides the draft documentation necessary to place mandatory actions into effect if other measures fail.

Advanced Alert: The highest degree of civil readiness posture. See Civil Readiness Level.

Agricultural Food Resources: All commodities and products, simple, mixed, or compound, or complements to such commodities or products that are capable of being eaten or drunk, by either human beings or animals, irrespective of other uses to which such commodity or the products thereof in vendible form for human or animal consumption. For the purposes of this definition, the term "food resources" includes all starches, sugars, vegetable and animal fats and oils, cotton, tobacco, wool, mohair, hemp, flax fiber, and naval stores, but does not include any such material after it loses its identity as an agricultural commodity or agricultural product.

Airburst: Nuclear explosion at such an altitude that the fireball does not touch the earth's surface. Also referred to as Nuclear Airburst.

Air Carrier: See Civil Air Carrier.

Air Carrier Aircraft: See Civil Air Carrier Aircraft.

Aircraft Dimensional Restrictions (Cargo): See Outsize Cargo and Oversize Cargo.

Air Defense: All measures designed to nullify or reduce the effectiveness of an attack by hostile aircraft or missiles after they are airborne.

Air Defense Emergency: An emergency condition declared or confirmed by either the Commander in Chief, Aerospace Defense Command or Commander in Chief, Continental Air Defense Command, or higher authority, which exists when attack upon the Continental United States, Alaska, Canada, or U.S. installations in Greenland by hostile aircraft or missiles is considered probable, is imminent, or is taking place.

Alerting Schedule: A schedule of persons to be notified, on a need-to-know basis, of changes in readiness posture and/or of special actions to be taken.

Allocation: The apportionment of a critical resource to assure completion of contracts, orders, or (transportation) services of a priority nature under conditions of an emergency so recognized by the President, the Congress or other competent authority. The extent of an allocation as applied to a specific resource is based on the degree of criticality of the resource and the urgency, essentiality or merit as dictated by the needs of the emergency and the attainment of national objectives.

Allowable Cabin Load (ACL): The maximum payload weight which can be carried on a flight. It may be limited by the maximum gross takeoff weight, by the maximum gross landing weight, or by the maximum zero fuel weight.

Alternate Headquarters: An existing operational facility designated to assume essential emergency functions of the primary headquarters in the event such headquarters cannot operate or relocate. (See Emergency Operating Facilities).

Amtrak: The National Railroad Passenger Corporation, a quasi-federal organization responsible for the maintenance of a nationwide intercity (other than commuter) rail passenger service.

Armed Forces of the United States: A term used to denote collectively all components of the Army, Navy, Air Force, Marine Corps, and Coast Guard.

Associated Federal Claimant: A Federal agency that has been assigned claimancy responsibility for a program or group of economic activities that is part of a broader program. An associated claimant agency will submit requirements on those programs or activities under its cognizance to the Federal claimant agency assigned responsibility for the broader program with which its activities are associated.

NOTE: A Federal Claimant Agency may delegate a major segment of an assigned requirements program to a Federal agency or bureau that has a related responsibility for or knowledge of the operations of that segments of the program. Agencies receiving such delegations are designated Associated Federal Claimant Agencies.

Associated Federal Transportation Agencies: All Federal Transportation Operating and Support Agencies.

Attack Warning: A civilian warning used to notify the civil authorities, military facilities and the general public that an attack upon the United States has been detected. It is based on decisions within the North American Air Defense Command (NORAD). The attack warning is declared by the National Warning Center, and is disseminated to all points on the National Warning System, including the major radio, television and news agencies. (Also see Warning Terms.)

Attack Warning System: See "Civil Defense Warning System."

Attenuation: Decrease in intensity of an energy beam or wave as a result of absorption of energy and of scattering out of the path of a detector or target. Attenuation operates in addition to the effect of distance and radial spread in reducing the energy intensity received by a given target. Attenuation rate measures the proportion by which radiating energy will be reduced in intensity as it travels a given distance through particular media.

Bale Cubic: The space available for cargo measured in cubic feet to the inside of the cargo battens, or the frames, and to the underside of the beams on a ship.

Bareboat Charter: A contract for the hire of a ship at a stipulated price for a stated period of time, during which period the charterer agrees to maintain the ship in the condition in which he received it and be responsible for operating the ship and all its expenses, except mortgage costs, until redelivered to the owner.

Barrel: 42 gallons, 5.615 cu. ft. in volume.

Base time period (transportation): The time period expressed in months or quarters during which a particular set of transportation priorities, allocations or controls is effective.

Beach Capacity: An expression in terms of measurement tons, or weight tons, of cargo that may be unloaded over a designated strip of shore per day.

Biological Warfare: The employment of living organisms, toxic biological products, and plant growth regulators to produce death or casualties in man, animals or plants; or defense against such action. (Reference: JCS PUB 1, Department of Defense, Dictionary of Military and Associated Terms, September 1974)

Blast: The brief and rapid movement of air vapor or fluid away from a center of outward pressure, as in an explosion or in the combustion of rocket fuel; the pressure accompanying this movement. This term is commonly used for "explosion," but the two terms may be distinguished.

Blast Effect: Destruction of or damage to structures and personnel by the force of an explosion on or above the surface of the ground. Blast effect may be contrasted with the catering and ground-shock effects of a projectile or charge which goes off beneath the surface.

Blast Wave: A sharply defined wave of increased pressure rapidly propagated through a surrounding medium from a center of detonation or similar disturbance.

Bulk Petroleum: Liquid petroleum (crude and/or products) which are normally transported by pipeline, railroad tank car, tank truck, tank trailer, barge and/or coastal or ocean tanker, and stored in tank or container having a fill capacity greater than 55 United States gallons (45 Imperial gallons).

Cadre (Emergency): See Emergency Cadre.

Capability (Transportation): The potential of a form of civil transportation to perform. (Includes capacity and necessary supporting resources.)

Capacity (Transportation): The service, equipment and facilities portions of the civil transportation capability that is available for allocation to users for the movement of persons and/or things.

Captain of the Port (COTP): The Officer of the United States Coast Guard, under the command of a district commander, so designated by the Commandant for the purpose of giving immediate direction to Coast Guard law enforcement activities and to the Port Safety/Security Program within a defined port area. In any port area within the jurisdiction of the United States where a COTP is not designated, the district commander shall, in addition to other duties with which he is charged, be responsible for carrying out the duties of the Captain of the Port. (Not to be confused with MARAD Federal Port Controller).

Cargo Deadweight: The cargo lift capacity of a ship determined by deducting from the total deadweight of fuel, water, stores, dunnage, crew, etc., expressed in long tons (2240 lbs.).

Category "A" Traffic (DOD): One way traffic moved in less than plane load lots by regularly scheduled air carriers over their commercial routes. Movement is from the CONUS to an overseas area or an overseas area to the CONUS in accordance with an international airlift contract between the government and the air carrier and guarantees movement of specific numbers and amounts of passengers and cargo per month. Cost is per CAB approved rates published in the applicable international airlift contracts. Cost to the user is at MAC traffic rates.

Category "B" Traffic (DOD): Traffic moved in plane load lots by an air carrier having an airlift contract, or entering into one time charter agreements, with the Government. Required routings are designated in the contract or charter agreement. Cost is per the contract or charter rates as approved by the CAB. This type of transportation is billed at the appropriate MAC tariff rates.

Category "Z" Traffic (DOD): Travel by regularly scheduled U.S. flag international air carriers with tickets procured by Government transportation requests at special rates applicable to DOD traffic. Billing is direct to the user's fund citation and does not involve the Armed Services Industrial Fund (ASIF).



Censorship: Inspection and regulation of material to prevent the unauthorized disclosure of information of value to an enemy and to secure intelligence of value to the United States in the prosecution of war.

Chemical Warfare: The employment of chemical agents to: a. kill, or incapacitate for a significant period of time, man or animals, and b. deny or hinder use of areas, facilities or materials and defense against such action. Excluded from considerations are riot control agents, chemical herbicides, smoke and flame. (Reference: JCS PUB 1, Department of Defense, Dictionary of Military and Associated Terms, September 1974.)

Civil Aircraft: Any aircraft other than public aircraft.

Civil Air Carrier: An operator of civil air carrier aircraft.

Civil Air Carrier Aircraft: All civil aircraft, both fixed and rotary wing, operated by a carrier whose operations are in conformity with the provisions of Part 121 (scheduled domestic, flag and cargo carriers: commercial operators of large aircraft: supplemental and intra-state carriers), or Parts 127 (scheduled helicopters) and 129 (foreign carriers), of the Federal Aviation Regulations.

Civil Air Carrier Service: Air transportation services provided by a civil air carrier.

Civil Aviation: All aviation activities involving civil aircraft.

Civil Defense: Activities and measures designed or undertaken, (1) to minimize the effects upon the civilian population caused or which would be caused by an attack upon the United States, (2) to deal with the immediate emergency conditions which would be created by any such attack, and (3) to effectuate emergency repairs to, or the emergency restoration of, vital utilities and facilities destroyed or damaged by any such attack.

Civil Defense Emergency: A condition which exists when the President, by proclamation, or the Congress, by appropriate action, finds that an attack upon the United States has occurred or is anticipated. A Defense Emergency.

Civil Defense Warning System (CDWS): A combination of Federal, State and Local systems which are designed to convey warning of enemy attack to the Federal, State and local governments, the military and the civilian population. The national Warning System (NAWAS) is the Federal portion of this system and is a nationwide, dedicated, party line telephone system operating on a 24-hour basis.

Civil Disturbances: Riots, acts of violence, insurrections, unlawful obstructions or assemblages, or other disorders prejudicial to public law and order within the 50 States, District of Columbia, Commonwealth of Puerto Rico, U.S. possessions and territories, or any political subdivision

thereof. The term civil disturbance includes all domestic conditions requiring the use of Federal armed forces pursuant to the provisions of Paragraph 10, U.S.C. Chapter 15.

Civil Preparedness (CP): Civil preparedness is directed at helping State and local governments improve their readiness for lifesaving operations in any type of emergency. Emphasis is on operational capability -- the ability to actually conduct coordinated operations in a major emergency. Civil defense refers to an enemy attack whereas civil preparedness refers to all emergencies, including contingencies of enemy attack, natural disasters, and peacetime emergencies which occur suddenly or after a threat or strategic warning period.

Civil Preparedness Actions: See Civil Readiness Levels.

Civil Readiness Level(s): Civil preparedness actions declared by and for the civil side of government and which provide for initiating increased readiness of Federal departments and agencies having nonmilitary defense responsibilities. These actions are of three levels in ascending order, respectively: Communications Watch (Exercise term - QUICK STEP); Initial Alert (Exercise term - TIGHT REIN); and Advanced Alert (Exercise term - FLOOD TIDE).

Civil Reserve Air Fleet (CRAF): Those air carrier aircraft allocated by the Secretary of Transportation (Office of Emergency Transportation) to the Department of Defense for military operations during an emergency.

Civil Transportation: The movement of persons, property, or mail by civil facilities and the resources (including storage, except for agricultural and petroleum products) necessary to accomplish such movement. (This definition excludes transportation operated or controlled by the military and petroleum and gas pipelines).

Civil Transportation System: The nation's civil transportation capability for moving persons and things whether directly or indirectly regulated by a government agency and including those Exempt and Private carriers offering such a service regardless of whether the offering is to the general public, but excluding transportation by Federal, State, County and Municipal vehicles and vehicles for use primarily on the farm.

Civilian Requirements: The requirements for resources necessary to maintain the civilian economy in a state of productive efficiency and, in post-nuclear attack period, to assure survival of the Nation's remaining population and to restore its productivity.

Claimancy: The process of calculating the requirements for resources (e.g., transportation services) to carry out a function or mission or to achieve a goal and of presenting each such requirement to the Federal Agency responsible for determining the allocation of the supply or service (e.g., transportation) of the particular resource involved.

Claimant: See Federal Claimant Agency.

Clandestine Ordnance: Destructive devices covertly assembled in or introduced into this country.

Command and Control: The exercise of direction and control by a properly designated authority over assigned resources in the accomplishment of the mission.

Command, Control and Communications Center: A command center at any echelon from which designated authorities function during times of crisis or national emergency. Also known as C<sup>3</sup> Center.

Command, Control and Communications System: An integrated system comprised of policy, procedures, organizational structure, personnel, equipment, facilities and communications which provides authorities at all levels with timely and adequate data to plan, direct and control their operations. Also known as C<sup>3</sup> System.

Commercial Augmentation (DOD): Airlift services provided by contract commercial air carrier for the movement of DOD peacetime traffic.

Communications Watch: The normal or near normal civil readiness posture. See Civil Readiness Level.

Contamination: The condition resulting from the deposit of radioactive material, biological warfare agents, other disease-producing agents, or chemical warfare agents in or upon structures, areas, bodies of water, personnel and objects, or caused by deterioration due to failure of normal sanitary safeguards. Includes food, water and medical supplies which may be contaminated with disease-producing agents as an indirect result of an attack.

Contingency Plan: A plan for major contingencies which can reasonably be anticipated in an area of responsibility.

Continuity of Government: All measures designed or taken to assure the continuity of essential functions of government in event of an enemy attack, or other national emergency.

Convoy (Ship): A number of merchant ships or naval auxiliaries or both, usually escorted by warship and/or aircraft assembled and organized for passage together.

Coordinates: Reference lines on a map used to establish the location of a particular point.

Coordinating Authority: A department, agency or individual assigned responsibility for coordinating specific emergency preparedness functions or activities involving two or more departments or agencies. This department, agency or individual has the authority to require consultation between the agencies involved, but does not have the authority to compel agreement. In the event essential agreement is not obtainable, the matter shall be referred to Director, Federal Emergency Management Agency/Office of Defense Resources (FEMA/ODR).

Counterintelligence: That phase of intelligence covering all activities devoted to destroying the effectiveness of inimical foreign intelligence activities and to the protection of information against espionage, personnel against subversion, and installations against sabotage.

Crippling: The degree of destruction, disruption, and loss of life that, while not decisive, would raise serious question as to the ability of the economy, area or facility to recover and regain former status.

Crisis (Domestic): The shortage or disruption of resources which threaten the health, well-being or security of our communities and nation and which requires the cooperation of government, the public and industry in its resolution.

Crisis Management: The mechanism or process of government to secure resolution of a crisis through government, public and/or industry actions.

Crisis Relocation Planning (CRP): The planning accomplished by planners and State and local government officials dealing with the evacuation of the population from areas considered to be at high risk to the direct effects of a nuclear weapons attack (i.e., blast, thermal and initial nuclear radiation) to host areas considered to be at lower risk. Such planning includes not only the movement of evacuees but also their care in host areas (i.e., assignment to congregate care, space, food, fallout protection, health, etc.).

Critical Facility: A facility, structure, or appurtenance which comprises all or a portion of a transportation system and which by virtue of its essential nature may require protection from subversive activities.

Critical Leg: The segment of a route which governs the Allowable Cabin Load which may be carried over that route.

Damage Area: An area suffering from blast and thermal damage from a nuclear attack including secondary fires. This area or part thereof, may also suffer effects from radioactive fallout.

Damage Assessment: The appraisal of the effects of enemy attacks on resources and exploration of alternative programs for the use of surviving resources.

Damage Criteria: Degree of damage. Slight (broken window, etc.) - requires some repair. Moderate - precludes further use unless major repairs are made. Severe - precludes further use unless essentially reconstructed.

Deadweight Tonnage: The lift capacity of a ship expressed in long tons (2240 lbs.). Lift capacity includes weight of cargo, fuel, stores and water to be loaded.

Decay Rate: A measure of the systematic decrease in the energy output of any radioactive material over time due to spontaneous emissions from unstable atomic nuclei.

Declared Disaster: A disaster of sufficient magnitude that, upon request from a State governor, the President officially makes a declaration as such, thereby allowing for Federal aid as required to supplement state and local assistance and that assistance rendered by Federal agencies under their own statutory authorities.

D-Day: The unnamed day on which a particular operation commences or is to commence. An operation may be the commencement of hostilities; the date of a major military effort; the execution date of an operation (as distinguished from the date the order to execute is issued); the date the operations phase is implemented, either by land assault, air strike, naval bombardment, parachute assault or amphibious assault.

Decontamination: The process of reducing the personnel hazard associated with an object or area by absorbing, destroying, neutralizing, making harmless, or removing chemical, biological, radiological or toxicological agents clinging to or around it.

Defense Classification: A category or grade assigned to information or material which denotes the degree of danger to national security would result from its unauthorized disclosure, and for which standards in handling; storage and dissemination have been established. These categories listed in increasing grade are as follows: Confidential, Secret, Top Secret.

Defense Emergency: All adverse military situations affecting the Nation's security so recognized by the President, the Congress, or other competent authority. Includes (1) a major attack made upon U.S. Forces overseas or on allied forces in any theatre and confirmed either by the commander of a command established by the Secretary of Defense, or higher authority; or (2) an overt attack of any type made upon the United States and confirmed either by the commander of a command established by the Secretary of Defense, or higher authority.

Defense Readiness Condition(s) (DEFCONS): Levels of military readiness declared by and for the military services. Declaration of, or changes to DEFCONS are classified. DEFCONS range from 5 to 1 with one (1) as the highest state of readiness when attained.

Defense Supporting Requirements: That portion of the Nation's resources required to assure adequate production and logistical support of the mobilization and combat operations of the Armed Forces of the United States.

Department of Transportation Emergency Organization (DOT EO): The Secretary of Transportation's organizational structure for the emergency management of the transportation resource.

Destroyed (Nuclear Attack): There is a 50 percent probability that the facility is totally destroyed and none of the components or contents are salvageable.

Disaster: An occurrence threatening the health, safety or property of a community or larger area. Examples are nuclear attack, earthquakes, tidal waves, floods, hurricanes, accidents involving hazardous materials, etc.

Disaster Assistance (Federal): See Major Disaster Assistance (Federal).

Dispersal Base: A base (civil or military) selected in a low probable target area to which limited numbers of aircraft may be dispersed for survival purposes; often referred to as "Safe Haven" airports.

District Emergency Highway Traffic Regulation: See Emergency Highway Traffic Regulation.

Domestic Crisis: See Crisis (Domestic).

Domestic Emergency: An emergency affecting public welfare occurring in the United States, its territories and possessions, as a result of enemy attack, insurrection, civil disturbance, earthquake, fire, flood, crisis (domestic), or other public disaster or equivalent emergency which endangers life and property or disrupts the usual process of government. A defense or non-defense emergency depending upon the circumstances which created the emergency condition.

Dose: See Radiation Dose.

Dose Rate: See Radiation Dose Rate.

Dosimetry: The theory and application of the principles and techniques involved in the measurement and recording of radiation dose and dose rates. Its practical aspect is concerned with the use of various types of radiation measuring instruments and devices, such as radiation counters, film badges, etc. The term dosimeter is applied to any instrument for measuring and registering total accumulated exposure to ionizing radiations.

Easting: Easting is a term used in connection with the Universal Transverse Mercator system of point location to denote the west-east location within a zone. The total UTM coordinate identifying a point location is made up of three numerical elements: ZONE, EASTING, AND NORTHING (which identifies the north-south position of the point).

Economic Mobilization: The process of preparing for and carrying out such changes in the organization and functioning of the national economy as are necessary to provide for the optimum use of resources in a national emergency.

Economic Stabilization: Emergency economic measures designed to stabilize the economy or, in the event of attack upon the United States, to restore our economy, and thereafter, to stabilize it. These economic measures would include indirect controls concerned with fiscal and monetary policies, as well as direct controls such as rationing of consumer goods and price, wage, and rent controls.

Economic Warfare: The application, in peace or war, of measures for the purpose of influencing the economic potential, primarily the economic potential for war, of one or more nations vis-a-vis others, in furtherance of national security objectives.

Effective Wind: Combined effect of winds at various altitudes through which fallout must pass.

Effective Wind Direction: A single direction representing the effect on fallout of all wind vectors at various altitudes.

Effective Wind Speed: A single wind speed representing the effect on fallout of the wind speeds at various altitudes.

Embargo: A method of controlling civil transportation movement when accumulations threaten congestion or other interference with operations of a temporary nature, compel restriction against such movements. Embargoes may be placed against a consignor, a consignee, a geographical or other specified area or a particular point, or the movement of a specific commodity or group of commodities, or the use of certain transportation facilities or services, or transportation equipment.

Embarkation Area: An area ashore, including a group of embarkation points, in which final preparations for embarkation are completed and through which assigned personnel and loads for vehicles, aircraft, craft and ships are called forward to embark.

Emergency: Any situation adversely affecting the national defense or national interest that is so recognized by the President, the Congress, or other competent authority. A defense or nondefense emergency depending on the situation which created the emergency.

Emergency Cadre: A predesignated group of persons, including officials in the line of succession, to man emergency alternate headquarters sites and/or serve as the nucleus for reconstitution of normal government functions.

Emergency Financial System: A plan for financing essential functions of the Federal Government in the event of a disaster situation.

Emergency Highway Traffic Regulation (EHTR): A system of traffic management and control devised to regulate the use of highways and to expedite and facilitate essential movements during a national defense emergency, a natural disaster, or other emergency.

Emergency Highway Traffic Regulation (EHTR) Posts: Control points at each end of or along regulated routes, for the purpose of controlling the flow of traffic onto or on the route, checking road use permits, and advising occupants of vehicles of any danger from radioactive fallout.

Emergency Highway Traffic Regulation (EHTR) Sector Center: The centers designated by the State as subordinate to the District EHTR center and responsible for an appropriate part of the State supervised by the district EHTR centers.

District Emergency Highway Traffic Regulation (EHTR) Center: The centers designated by a State as subordinate to the State EHTR center and responsible for an appropriate part of the State supervised by the State EHTR center. The title of these centers varies from State to State depending on the State agency responsible for emergency highway traffic regulation.

State Emergency Highway Traffic Regulation (EHTR) Center: The center designated by a State as the agency responsible for overall supervision of emergency highway traffic regulation within the State.

Emergency Operating Center (EOC): A facility from which the senior responsible official and his representatives will be able to receive essential information, consider alternative courses of emergency action, make logical crisis decisions, communicate their decisions to their own and other government operating forces, and provide emergency information to the public. (An emergency operating facility.)

Emergency Operating Facility (EOF): Any facility where essential emergency functions are scheduled to be performed.

Emergency Operations Simulation (EOS) Exercise: A training technique sponsored by the Federal Highway Administration through which each State highway organization's key personnel can practice, via simulation, the review and implementation of those emergency plans and procedures designed to insure the recovery of the various highway systems within each State's boundaries (particularly the Defense Highway network) during a national defense emergency.

Emergency Responsibilities (categories of Federal organizations):

Category A. Organizations requiring a capability for uninterrupted emergency operations including the immediate preattack, transattack and immediate postattack periods.

Category B. Organizations with a requirement for postattack reconstitution as soon as conditions permit, unless otherwise directed by appropriate authority.

Category C. Organizations that are to defer reconstitution until directed by appropriate authority.



Emergency Standby Orders (FHWA): A series of Federal Highway Administration (FHWA) directives designed to provide the Washington headquarters, regional and division offices with uniform guidelines and procedures covering the additional operations for which the FHWA is responsible in an emergency and the authorities necessary to carry out these responsibilities.

Emergency Welfare Services: Feeding, clothing, lodging in private and congregate facilities; registration; locating and reuniting families; care of unaccompanied children, the aged, the handicapped, and other groups needing specialized care or service; necessary financial assistance or assistance in kind; counseling and referral services to families and individuals; aid to welfare institutions under national emergency or postattack conditions; and all other feasible welfare aid and services to people in need during a civil defense emergency. Such measures include organization, direction, and provision of services to be instituted before attack, in the event of strategic or tactical evacuation, and after attack.

Endurance: The time an aircraft can continue flying or a vehicle, craft or ship can continue operating under specified conditions, e.g., without refueling.

Essential Emergency Functions: Those functions of the Federal Government which are necessary to maintain government viability in wartime and which are considered uninterruptible.

Evacuation: The clearance of personnel, animals, or material from a given locality.

Evacuee: A civilian removed from his place of residence for reasons of his own security or the requirements of the military situation.

Executive Management: The exercise of policy direction and the overall control (as distinguished from the "how" or operational direction).

Facility: Any part or adjunct of a physical plant, or any item of equipment which is an operating entity and which contributes or can contribute to the execution of a function by providing some specific type of physical assistance.

Fallout: In connection with nuclear explosions, the process of fallback to the earth's surface of particles contaminated with radioactive material from the radioactive cloud associated with a surface burst. The term is also applied in a collective sense to the contaminated particulate matter itself. The early (or local) fallout is defined, somewhat arbitrarily, as those particles which reach the earth within 24 hours after a nuclear explosion and which are of immediate concern in connection with nuclear attack. Delayed (or world-wide) fallout consists of the smaller particles which ascent into the upper atmosphere and are widely distributed over extended periods ranging from months to years.

Fallout Area: An area subject to residual nuclear radiation sufficient to cause death and/or sickness, and which prevents free movement of personnel.

Fallout Pattern: The fallout anticipated from the effective wind and bomb yield. Plotted on a map, it would form downwind a smoothly contoured shape that generally increases in size with distance from ground zero.

Fatalities, Certain: Certain Fatalities is a term used in casualty estimation as described in this document which identifies the mortalities, i.e., the number of persons who die during the first day of the detonation plus the number fatally injured by blast, thermal, or radiation effects including those injured who survive the first day and may not die for some period of time after the detonation but who cannot be expected to recover.

Federal Aviation Regulations: Safety regulations applicable to the civil aviation industry; issued by the Administrator of the Federal Aviation Administration, pursuant to his authority under the Federal Aviation Act of 1958.

Federal Aviation Regulation System: The rules, regulations, standards or system characteristics to which FAA requires adherence in the interest of safety, regularity or efficiency of the National Aviation System. (Part of the National Aviation System.)

Federal Associated Claimant Agency: A Federal agency that has been assigned claimancy responsibility for a program or group of economic activities that is part of a broader program. An associated claimant agency will submit requirements on those programs or activities under its cognizance to the Federal claimant agency assigned responsibility for the broader program with which its activities are associated.

NOTE: A Federal Claimant Agency, with the concurrence of ODR may delegate a major segment of an assigned requirements program to a Federal agency or bureau that has a related responsibility for or knowledge of the operations of that segment of the program. Agencies receiving such delegations are Federal Associated Claimant Agencies.

Federal Claimant: See Federal Claimant Agency.

Federal Claimant Agency: A Federal agency which is assigned responsibility for developing and/or assembling from associated claimant agencies data on the amounts of goods, services, and manpower that will be required during stated future time periods to carry on its own program responsibilities, or the programs of the government, industry or economic activity it represents, and for presenting and justifying such program requirements to the appropriate Federal resource agencies and/or ODR.

Federal Mobilization Designee: See Mobilization Designee.

Federal Port Controller: Represents the authority of the United States responsible for the efficient and effective utilization of an assigned port or port area when directed by the Maritime Administration. (Not to be confused with the USCG Captain of the Port.)

Federal Property: Property owned, leased, possessed, or occupied by the Federal Government.

Federal Regional Center (FRC): A protected location which serves as the principal regional operating location for FEMA and the alternate regional operating center for ODR (when activated) and other Federal departments and agencies having uninterruptible essential functions. If occupied by ODR and other Federal departments and agencies, it will be the control point for collection and dissemination of emergency situation information and data and the development and issuance of Federal guidance and directives.

Federal Resource Agency: A duly designated Federal agency which has been assigned responsibility for regulating, controlling or providing operational direction to the activities of a broad segment of the economy or a portion thereof in an emergency. A Federal resource agency may be responsible for exercising emergency control or direction over the production, processing, distribution, and use of an assigned category of manpower, goods, or services and related facilities, or over one or any combination of such activities or facilities.

Federal Transportation Community: The Office of Emergency Transportation (DOT) and the Federal transportation operating agencies and the Federal transportation support agencies having an emergency responsibility for providing operational direction and/or support to the one or more forms of civil transportation within their sphere of authority.

Federal Transportation Operating Agencies: Those Federal agencies having responsibility under emergency conditions for the operational direction of one or more forms of civil transportation; they are also referred to as associated Federal transportation agencies, Federal modal agencies, Federal transport agencies, Federal transportation community, or just operating and support agencies. They include, with their general area of responsibility, the:

Civil Aeronautics Board (CAB): Domestic and international civil air carrier transportation. Administers the War Air Service Program (WASP).

Federal Aviation Administration (FAA), DOT: National Airspace System, Related civil air carrier transportation activities. General Aviation activities and civil airports.

Federal Highway Administration (FHWA), DOT: Roads, streets and highways and traffic regulations.

Federal Railroad Administration (FRA), DOT: The Alaska Railroad System and facilities, and, High Speed Ground Test Center.

Interstate Commerce Commission (ICC): Rail, motor and inland water carriers, freight forwarders and related facilities. Also public storage and warehouse activities other than food resource storage.

Maritime Administration (MARAD), DOC: Ocean shipping (including Great Lakes and coastwise), related deep water activities and civil shipbuilding and repair facilities.

Materials Transportation Bureau (MTB), DOT: Pipeline services and facilities other than petroleum and gas pipelines, water aqueducts, and, related facilities.

Urban Mass Transportation Administration (UMTA), DOT: Metropolitan mass passenger transportation service.

Federal Transportation Support Agencies: Those Federal agencies having functions complementary to those identified with transportation operating agencies. They include, with their area of responsibility, the:

Emergency Petroleum and Gas Administration (EPGA), DOE: Petroleum and gas pipelines and facilities. (No DOT EO claimancy support.)

National Highway Traffic Safety Administration (NHTSA), DOT: Privately owned and operated automobile operational data.

National Oceanic and Atmospheric Administration (NOAA), DOC: Aeronautical and nautical data, and environmental services. (No DOT EO claimancy support.)

St. Lawrence Seaway Development Corporation (SLS), DOT: U.S. sectional navigational systems of the St. Lawrence.

Tennessee Valley Authority (TVA): Tennessee River navigational system.

U.S. Army Corps of Engineers (COECW), DOD: Rivers and harbors navigational activities.

United States Coast Guard (USCG), DOT: Maritime and inland waterway safety including navigational aids.

Field Board , FEMA: A regional organization chaired by the FEMA Regional Director and composed of representatives of the field or other elements of those agencies of the Federal Government that maintain a primary or secondary interest in the resource or services involved in a crisis, and which would be expected to act in response to the crisis.

Fireball: The luminous sphere of hot gases which forms a few millionths of a second after a nuclear explosion as the result of the absorption by the surrounding medium of the thermal radiation from the extremely hot (several tens of millions of degrees) weapon residues. Initially, the exterior of fireball is sharply defined by the luminous shock front and later by the limits of the hot gases themselves.

Fire Damage (Nuclear Attack): There is a 50 percent probability that a fire would have occurred at this facility.

Fire Storm: A stationary mass fire, generally in built-up urban areas, generating strong, intrushing winds from all sides; the winds keep the fires from spreading while adding fresh oxygen to increase their intensity.

Fission: The process whereby the nucleus of a particular heavy element splits into two nuclei, generally of lighter elements, with the release of substantial amounts of energy. The most important fissionable materials are uranium-235 and plutonium-239.

Flood Tide: An exercise term. See Civil Readiness Level.

Food Resources: See Agricultural Food Resources.

Foreign Requirements: The requirements for resources necessary to assist friendly foreign countries in maintaining their civilian economies in a state of productive efficiency and, in a post nuclear attack, assuring survival of their remaining populations and restoring their productivity, with due attention to both physical well-being and morale. Not included are items necessary to provide military support of friendly or enemy civilian populations in combat areas. (See definition for Military Requirements.)

Forms of Civil Transportation: For the purpose of emergency transportation resource management, the forms of civil transportation are: air, motor, rail, pipeline, public storage and warehousing, freight forwarding, inland water, Great Lakes, and ocean shipping (including coastwise) and their related facilities.

Fusion: The process whereby the nuclei of light elements, especially those of the isotopes of hydrogen-namely, deuterium and tritium-combine to form the nucleus of a heavier element with the release of substantial amounts of energy.

Gas: Natural gas (including helium) and manufactured gas.

General Agency Agreement (GAA): An agreement between the Government and a qualified ship operator, whereby the operator agrees to operate a Government-owned ship on behalf of the Government on the basis of actual operating costs plus a stipulated management fee.

General Aviation: All civil aviation except that involving civil air carrier aircraft.

General Aviation Aircraft: All civil aircraft other than civil air carrier aircraft, including those subject to the certification provisions of Part 123 (air travel clubs) of the Federal Aviation Regulations.

General Cargo: Cargo which is susceptible of loading in boxes, bales, barrels, crates, packages, bundles and pallets.

General Orders: Permanent instructions, issued in order form, that apply to all members of an organization, as compared with special orders which affect only individuals or small groups.

General Purchasing Agents: Agents who have been appointed in the principal overseas areas of operations to supervise, control, coordinate, negotiate, and develop the local procurement of supplies, services and facilities in order that the most effective utilization may be made of local resources and production.

General War: Armed conflict between major powers in which the total resources of the belligerents are employed, and the national survival of a major belligerent is in jeopardy.

Grain Cubic: The maximum space available for cargo.

Graphic Reference Point: A point on a graduated line by means of which distances on a map or chart may be measured in terms of ground distance.

Greenwich Meridian Time: See Zulu Time. (Also see Chapter 3.)

Gross Tonnage: The entire internal cubic capacity of a ship expressed in tons of 100 cubic feet to the ton, except certain spaces which are exempted, such as tanks for water ballast, open forecastle, light and air space, condenser, anchor gear, steering gear, wheel house, galley, cabins for passengers, etc.

Ground Shock: Earthquake-like effect resulting from an explosion.

Ground Zero: The geographic point on the earth's surface used to establish the location of a nuclear detonation. The point on the surface of land or water vertically below or above the center of a burst of nuclear (or atomic) weapons; frequently abbreviated to GZ.

Guidance: Policy, direction, decision, or instruction, having the effect of an order when promulgated by a higher echelon.

Hardening: Reducing the vulnerability of a structure, device or system by strengthening its material component or otherwise increasing its physical protection against deliberate, accidental or natural damage or wear.

Heavy Lift Cargo: Any single cargo lift weighing over five long tons and to be handled aboard ship.

Height of Burst: The height above the earth's surface at which a nuclear weapon is detonated.

High-Altitude Burst: This is defined, somewhat arbitrarily, as a detonation at an altitude over 100,000 feet. Above this level, the distribution of the energy of the explosion between blast and thermal radiation changes appreciably with increasing altitude due to change in the fireball phenomena.

Highways: See Highways and Streets.

Highways and Streets: All Federal, State, city, local, and other highways, roads, streets, bridges, tunnels, and appurtenant structures.

Highway Users Representative: Personnel from trucking associations, State public utility commissions or volunteers from any class of highway users acceptable to the State EHTR organization. This group will augment, as necessary, the personnel staffing State emergency highway traffic regulation centers, district centers and sector centers.

Hold: A cargo storage compartment aboard ship.

Immediate Postattack: See Postattack.

Initial Alert: An increase in civil readiness posture. See Civil Readiness Level.

In-Place Planning: The planning accomplished by State planners and local government officials dealing with providing protection against nuclear weapons effects for the in-place shelter posture (i.e., in existing facilities at or near where the people work or live).

Intelligence: The product resulting from the collection, evaluation, analysis, integration, and interpretation of all available information which concerns one or more aspects of foreign nations or areas of operations and which is immediately or potentially significant to planning.

Intercity Service: The movement of persons and things between towns, cities and metropolitan areas; not included are those movements taking place wholly within these areas, which are considered local or intracity.

Intermediate Scale Map: A map, normally of a scale from 1:200,000 to 1:500,000, intended for planning strategic operations, including the movement, concentration, and supply of troops. (See Chapter 5.)

International Tension: Conflict including a wide variety of occasional, acute or persisting crises short of overt armed conflict involving regular forces on a major scale. Cold war, incidents, guerrilla warfare, insurrection, insurgency and counterinsurgency, subversion, and hostile economic measures are among the forms of this kind of conflict.

Interstate Compact: Agreement between two or more States to commit supplies, materials, equipment, or forces to each other to alleviate the effects of the attack.

Interstate Target Area: Any metropolitan complex or other attached objective situated in two or more States.

Interstate (Primary) Transportation: Those civil transportation facilities, equipment, and services controlled or provided by carriers/terminal service operators generally engaged in interstate and/or international transportation and their related facilities, equipment and services. Emergency utilization of interstate transportation resources are the responsibility of the Federal Government.

Intrastate Mutual-Air Perimeter: Boundaries of a geographical area agreed upon by a State, and between two or more political subdivisions within a State, for purposes of planning for the exchange of supplies, materials, equipment, or forces to each other to alleviate the effects of attack.

Intrastate (Secondary) Transportation: Those civil transportation facilities, equipment, and services provided or authorized for use primarily within a State, territory, or the District of Columbia (excluding civil air carrier aircraft operating under the economic authority of the Civil Aeronautics Board) and their related facilities, equipment, and services. (The emergency utilization of intrastate transportation resources are the responsibility of State and local governments subject to Federal policies and national control systems.)

Kilogram: A metric measure of weight equivalent to 2.20462 lbs.

Kilometer: A metric measure of linear distance equivalent to .62137 Statute Miles.

Large Scale Map: A map having a scale of 1:75,000 or larger.

Latitude: Angular distance in degrees north or south from the equator. (Also referred to as parallel.)

Lattice: A network of intersecting positional lines overprinted on a map or chart from which a fix may be obtained.



Light Damage (Nuclear Attack): There is a 50 percent probability that this facility is operable but has sustained minor damage.

Limited War: Armed conflict short of general war, exclusive of incidents, involving the overt engagement of the military forces of two or more nations. (Incidents are brief clashes or other military disturbances generally of a transitory nature and not involving protracted hostilities).

Long Ton: A unit of weight of 2240 pounds; equivalent to 1.01605 metric tons.

Longitude: Angular distance in degrees east or west on the earth's surface measured by the angle which the meridian passing through a particular location makes with a standard or prime meridian passing through Greenwich, England.

Major Disaster (Federal): Any hurricane, tornado, storm, flood, high water, wind driven water, tidal wave, earthquake, drought, fire or other catastrophe in any part of the United States (meaning the fifty states, the District of Columbia, Puerto Rico, the Virgin Islands, Guam, American Samoa, and the Trust Territory of the Pacific Islands), which, in the determination of the President, is or threatens to be of sufficient severity and magnitude to warrant disaster assistance by the Federal Government and to supplement the efforts of States, local governments and relief organizations in alleviating the damage loss, hardship, or suffering caused thereby, and with respect to which the Governor of any State (meaning the appropriate political subdivision of the United States as defined above) in which such catastrophe occurs or threatens to occur certifies the need for Federal disaster assistance under the provisions of P.L. 93-288, as amended, and gives assurances of the expenditure of a reasonable amount of the funds of such State, its local governments, or other agencies for alleviating the damage, loss, hardship or suffering resulting from such catastrophe.

Major Disaster Assistance (Federal): The assistance rendered by elements of the Federal Government in accordance with the provisions of P.O. 93-288, as amended, and such other authorities applicable to their own agency.

Map Exercise: An exercise in which a series of events is stated and located on a map, the result of which assists in the solution of problems.

M-Day: The day designated as the beginning of a mobilization period.

Measurement Ton: A unit of volume for cargo computed at 40 cubic feet.

Meter: A unit of metric measure equivalent to 39.37 inches or 3.28 feet. One thousand (1,000) meters equals one kilometer which equals 0.62137 of a statute mile. (See Chapter 4.)

Meteorological Data: Reports of atmospheric phenomena and measurements of parameters such as wind, temperature, and air density.

Metric System: A decimal system of weights and measures. (See Chapter 4, Metric Conversion Factors.)

Metric Ton: A unit of metric measure equivalent to 1,000 kilograms. To convert to short tons, multiply by 1.10232; to convert to long tons, multiply by .98421. (See Chapter 4.)

Military Assistance to Civil Authority: The provision of resources of the Military Departments to aid civil authorities in maintenance of law and order, and to assist in the recovery from the effects of disaster.

Military Areas: Those geographical areas designated by the Secretary of Defense for military purposes from which any and all persons may be excluded and with respect to which, the right of any person to enter, remain in, or leave shall be subject to whatever restrictions the Secretary may impose at his discretion.

Military Requirements: The requirements for resources necessary for the Armed Forces of the United States to perform their assigned missions. Military requirements include those resources necessary to provide military support of our allies and minimum support of friendly or enemy civilian population in the combat areas. Not included are those quantities of items which may be required for transfer from the Armed Forces for civil defense purposes in the event of attack on the United States or as a result of other disasters. (See definition of Foreign Requirements.)

Minerals: All raw materials of mineral origin (except petroleum, gas, solid fuels, and source materials as defined in the Atomic Energy Act of 1954, as amended) obtained by mining and like operations processed through the stages specified and at the facilities designated in an agreement between the Secretary of the Interior and the Secretary of Commerce as being emergency preparedness responsibilities of the Secretary of the Interior.

Mobilization: The act of organizing and marshalling national resources to place the Nation in a state of readiness to meet a military threat. The calling up of reserves and the assembly of military forces in order to meet a defense emergency; the process of augmentation associated with these actions.

Mobilization Base: The total of all resources available, or which can be made available, to meet foreseeable wartime needs. They include resources required for the support of essential military, civilian, and survival activities as well as the elements affecting their state of readiness.

Mobilization Designee: A Federal civil servant or any military ready reservist, regardless of rank or grade, who has an emergency or mobilization assignment.

Modal/Mode: A particular category of a form of transportation, e.g., Motor Bus is a category of the Motor form of transportation; elevated and subway systems are categories of the Rail form of transportation; and ferry systems are a category of the Water form of transportation.

Moderate Damage (Nuclear Attack): There is a 50 percent probability that the facility is damaged to a degree that it is not usable without extensive repair.

Modern Ship Equivalent (MSE): A notional ship having the following planning characteristics: Container Ship: 23 knots, 1 day load, 1 day unload, 16,900 DWT. Dry Bulk: 17 knots, 2 day load, 3 day unload, 50,000 DWT. Tankers: 16 knots, 1 day load, 2 day unload, 70,000 DWT.

Monitoring - Radiological: The procedure or operation of locating and measuring radioactive contamination by means of survey instruments which indicate the residual radioactivity in terms of radiation intensity. The individual performing the operation is called a radiological monitor.

Mortalities: This term identifies the total number of persons killed and fatally injured by the direct effects of the detonation. This would include those who are critically injured by these effects and who succumb at a later date. The persons who die later as a result of radiation injuries are not included.

Movement Control: The planning, routing, scheduling and control of personnel and supply movements over lines of communications.

National Airspace System: The common network of U.S. airspace; navigation aids; communications facilities and equipment; air traffic control equipment and facilities; aeronautical charts and information; weather information; rules, regulations and procedures; technical information, and FAA manpower and material. Included are system components shared jointly with the military. (Part of the National Aviation System.)

National Aviation System: The physical complex of civil airmen, aircraft, airports, airspace, airways and facilities, and the services, regulations, plans, standards, procedures and practices associated with the complex including system components jointly shared with the military but not part of the system operated by the military for military use only. The system encompasses the National Airspace System, the National System of Airports and the Federal Aviation Regulation System.

National Defense Emergency: A Defense Emergency.

National Defense Executive Reserve: An organization of persons selected and trained for employment in executive positions in the Federal Government during periods of emergency pursuant to provisions of the Defense Production Act of 1950, as amended, and of Executive Order 11179, September 22, 1964.

National Emergency: A condition declared by the President or the Congress of the United States which authorizes certain emergency actions to be undertaken in the national interest. A Defense or Nondefense Emergency depending on the context in which it is used.

National Emergency Transportation Center: The facility, remote from Washington, D.C., at which is physically located in an emergency the national headquarters of the office of the Secretary of Transportation and such agencies or elements of the Federal transportation community as may elect to collocate there or provide liaison and support elements to the Secretary.

National Interest Emergency: A Nondefense Emergency.

National Network of Airports: Includes all public and private civil airports (including heliports, STOLports, and seaplane bases) within the United States and its territories.

National System of Airports: Consists of those publicly used civil and jointly used civil/military airports (including heliports, STOLports, and seaplane bases) within the United States and its territories where there is a national interest in providing reasonable access to the nation's air transportation system. (Part of the National Aviation System.)

National Warning System (NAWAS): The Federal portion of the Civil/Defense Warning System. It serves the contiguous continental United States.

Natural Disaster: Any act of nature which is or threatens to be of such severity and magnitude as to cause extensive loss of lives, personal injury, and/or damage to/loss of property.

Nautical Mile (International): A measure of lineal distance equal to one minute of a great circle on the earth's surface and is the length of one minute of latitude; 1,852 meters (6,076.1155 feet). To convert Statute Miles (5,280 feet) to International Nautical Miles, multiply by 0.868976; to convert International Nautical Miles to Statute Miles, multiply by 1.150779. Although the United States has adopted the International Nautical Mile, many conversion tables reflect the United States Nautical Mile equal to 1.853.2 meters (6080.2 feet) or 1.0006739 International Nautical Miles. See Statute Mile for conversion figures to U.S. Nautical Miles.

Nautical Mile (United States): See Nautical Mile (International).

Need to Know: A criterion used in security procedures which required the custodians of classified information to establish, prior to disclosure, that the intended recipient must have access to the information to perform his official duties.

Net Tonnage: The tonnage most frequently used for the calculation of tonnage taxes and the assessment of charges for port dues. Net tonnage is obtained by deducting from the gross tonnage, crew and navigation space and the space occupied by propelling machinery.

Neutron: A neutral particle, i.e., with no electrical charge, or approximately unit mass, present in all atomic nuclei, except those of ordinary (light) hydrogen. Neutrons are required to initiate the fission process, and large numbers of neutrons are produced by both fission and fusion reactions in nuclear explosion.

Nondefense Emergency: All regional or national adverse situations resulting from major disasters, civil disturbance, disruptive work stoppages, crisis (domestic), or other public disaster or equivalent emergency involving the general welfare so recognized by the President, the Congress, or other competent authority.

Northing: The term northing is used to refer to that portion of a UTM coordinate which indicates the north-south position of a particular place. It identifies the distance in meters north of the equator. In the Universal Transverse Mercator System for locating positions, each point description requires three numerical elements: ZONE, NORTHING, and EASTING (east-west position within the number UTM ZONE).

Nuclear Airburst: See Airburst.

Nuclear Detonation (NUDET): Used in training exercises to indicate that a nuclear device has been exploded.

Nuclear Radiation, Initial: Nuclear radiation (essentially neutrons and gamma rays) emitted from the fireball and the cloud column during the first minute after a nuclear (Atomic) explosion.

Nuclear Civil Protection (Planning): A planning effort designed to provide protection of the population through one or a combination of the following options: (1) in-place, at or near their places of residence or work; and (2) orderly relocation of people from areas of potentially high risk from the direct effects of nuclear weapons.

Nuclear Radiation, Residual: As distinct from initial or immediate radiation this is radiation, chiefly beta particles and gamma rays which persists for some time following a nuclear (or atomic) explosion. The radiation is emitted mainly by the fission products and other residues in the fallout, and to some extent by earth and water constituents, and other materials, in which radioactivity has been induced by the capture of neutrons.

Nuclear Weapon (or Bomb): A general name given to any weapon in which the explosion results from the energy released by reactions involving atomic nuclei, either fission or fusion or both. Thus, the A (for atomic) bomb and the H (for hydrogen) bomb are both nuclear weapons. It would be equally

true to call them atomic weapons, since it is the energy of atomic nuclei that is involved in each case.

Ocean Shipping: Includes all overseas, coastwise, intercoastal and Great Lakes shipping except that solely engaged in transportation of passengers and cargoes between United States ports on the Great Lakes.

Ocean Station: A ship assigned to operate within a specified area to provide several services including meteorological information, navigational aid, communications facilities, and search and rescue.

Office of Defense Resources (ODR): An emergency, standby organization which may be activated by the President in a grave, national emergency to assist him in the coordination, direction and control of the nation's economy.

Office of Emergency Transportation (OET): The primary staff element of the Department of Transportation engaged in the development, coordination, and review of policies, plans and programs for emergency preparedness.

Operational Control Authority (Shipping): The naval commander responsible for the control of the movement and for the protection of allied merchant shipping within a specified geographical limit.

Operational Control/Direction: The coordination and direction, exercised by Federal agencies through the appropriate private transportation, storage or freight forwarding organization and/or association, of the use of a form of civil transportation including its related facilities for the movement of passengers and freight/cargo traffic.

Operational Readiness: The state of preparedness of an operational system or organization to execute its war or peacetime emergency mission. It is the ultimate goal of emergency operational systems and organizational development.

Operation Order: A directive, usually formal, issued by a commander to subordinate commanders for the purpose of effecting the coordination of an operation.

Outsize Cargo (Aircraft Dimensional Restrictions): Any single item of cargo which exceeds capability of the C-130/C-141 aircraft and requires the use of C-5A. It is cargo that exceeds 828 inches long by 117 inches wide by 105 inches high in any dimension (loaded capability of the C-141 aircraft) and is qualified by the appropriate aircraft air dimension code assigned under MILSTAMP procedures. CRAF does not have the capability to lift any category of outsize cargo.

Overlay: A printing or drawing on a transparent or translucent medium at the same scale as a map, chart, etc., to show details not appearing, or requiring special emphasis on the original.

Oversize Cargo (Aircraft Dimensional Restrictions): Any single item of cargo that exceeds the usable dimensions of a 463L pallet 104 inches long by 84 inches wide and 48 inches high.

Overpressure: In the analysis of weapon effects, this term describes the transient pressure, usually expressed in pounds-per-square-inch above or below ambient pressure, manifested in the shock (or blast) wave; "positive" when above, "negative" when below.

Palletized Unit Load: Quantity of an item packaged or unpackaged, which is arranged on a pallet in a special manner and securely strapped or fastened thereto so that the whole is handled as a unit.

Passive Defense: Passive measures taken to reduce the probability of and to minimize the effects of damage caused by hostile action without the expectation of taking the initiative.

Penetration Rate: The term Penetration Rate as used in this document refers to the percentage of the outside radiation intensity that will penetrate through shielding material and expose resources inside the shielding material to radiation.

Perishable Cargo: Cargo requiring refrigeration such as meat, fruit and fresh vegetables, and medical biologicals.

Permit: An authorization to use transportation facilities and/or services for the movement of traffic when embargoes or other restraining orders are in effect.

Permit Agent: An official designated in an embargo or other transportation restraining order, who is authorized to issue or withhold transportation permits.

Petroleum: Crude oil and synthetic liquid fuel, their products, and associated hydrocarbons. Also see Page 601.

Physical Security: Security against sabotage, espionage, and other hostile activities, destructive acts and omissions, but excluding security attributable to operations of military defense and excluding also activities with respect to dispersal and postattack restoration of facilities.

Physical Vulnerability Code or Number: This is a seven-digit code assigned to each structure of a facility or installation which indicates, for use in the computer, its expected response to both the blast and the thermal effects of nuclear detonation.

Pipeline (Logistics): The channel of support or a specific portion thereof by means which personnel and material flow from the source of procurement to the point of use.

Policy Direction: An instrument of "Executive Management."

Port Area: Any zone contiguous to or associated in the traffic network of a port, or outport location including beach loading site, within which facilities exist for the transshipment of persons and property between water modes or between water modes and other modes of transportation.

Port Capacity: The estimated capacity of a port or an anchorage to clear cargo in 24 hours usually expressed in tons.

Port Complex: Two or more contiguous port areas.

Port Equipment: Barges, lighters and tugs operated within a port area, shore and floating cranes, all stevedoring gear, other handling equipment on piers, docks, wharves and marine terminals, and in warehouses (which warehouses are entirely or principally engaged with traffic through the port), and all other loading and unloading equipment and service watercraft normally used in the transfer or interchange of cargo and passengers between water modes or between water modes and other modes of transportation or indirect connection therewith.

Port Evacuation: The removal of shipping from a port/water terminal except perhaps for a few ships dispersed within the immediate vicinity thereof.

Port Facilities: Piers, docks, wharves, marine terminals, warehouses (which warehouses are entirely or principally engaged with traffic through the port), port equipment, and other land and water facilities in port areas incident to or effecting the transfer or interchange of cargo and passengers between water modes or between water modes and other modes of transportation

Postattack: Generally, that period subsequent to an attack upon the United States, its possessions and territories, although it may include only an attack on the United States, depending on the context of use. (Includes Immediate Postattack period - D day to D plus 45 days plus or minus 30 days.)

Preattack: Generally, that period beginning with the first increase in civil readiness level, usually call for COMMUNICATIONS WATCH, and extending during conditions of increased civil readiness levels until readiness levels are reduced to normal or an attack upon the United States takes place. This will be usually when the call for ATTACK WARNING (or the actual attack in the absence of such a call) takes place. (See also TRANSATTACK and POSTATTACK.)

Predelegation: The grant, prior to an emergency, to an individual of specific legal authority to carry out emergency responsibilities and functions.

Primary Transportation: See Interstate Transportation.



Priority: The preference which contracts, orders or (transportation) services, are given to assure completion, or delivery of goods (transportation), or performance of (transportation) services, ahead of other contracts, orders or (transportation) services not so designated, under conditions of a regional or national emergency so recognized by the President, the Congress or other competent authority. Order of preference is based on urgency, essentiality, or merit as dictated by the needs of the emergency and the attainment of national objectives.

Private Carrier: Those carriers which transport commodities of which they are owner, lessee or bailee and whose primary business is something other than that of performing a public (for hire) transportation service.

Program: The scheduling of future activities so as to meet projected requirements.

Protection Factor: The relative reduction in the amount of radiation that would be received by a person in a protected location compared to the amount he would receive if he were unprotected. Example: A shelter with a protection factor of 40 means that a person inside the shelter would be exposed to a dose rate of 1/40 of that to which he would be exposed in the same location if unprotected.

Public Aircraft: Aircraft used only in the service of a government or political subdivision. It does not include any government-owned aircraft engaged in carrying persons or property for commercial purposes. (Note: Definition applies to U.S. and foreign aircraft, including military aircraft, but not to those allocated to the Civil Reserve Air Fleet (CRAF) program or those used in providing U.S. military with peacetime commercial augmentation).

Public Attention (not subject to precise definition): Any action which warrants mention in any news medium or causes alarm to a large portion of the community in which the action is taken.

Quick Step: An exercise term. See Civil Readiness Level.

Radiation Dosage Limitations:

a. Peacetime - Maximum allowable occupational dosage of 1-1/4 roentgens over a 13-week period (a total of 5 rem per year).

b. Wartime - The accumulated radiation dosage should not exceed 200 roentgens during the first month. The following condensed table may be used for estimating the consequences from short-term external dosage (one week or less).

(1) Smallest effect detectable by statistical study of blood counts of a large group of people - 15 roentgens.

(2) Smallest effect detectable in an individual by laboratory methods - 50 roentgens.

(3) Smallest dose that causes vomiting on day of exposure in at least 10 percent of people - 75 roentgens.

(4) Smallest dose that causes depilation (loss of hair) in at least 10 percent of people - 100 roentgens.

(5) Largest dose that does not cause illness severe enough to require medical care in majority of people (more than nine out of ten) - 200 roentgens.

(6) Dose that would be fatal to about 50 percent of people - 450 roentgens.

(7) Fatal dose to almost everyone - 600 roentgens.

Radiation Dose: A (total or accumulated) quantity of ionizing (or nuclear) radiation. The term dose is often used in the sense of the exposure dose, expressed in roentgens, which is a measure of the total amount of ionization that the quantity of radiation could produce in air. Exposure dose should be distinguished from the absorbed dose, which represents the energy actually absorbed from the radiation per gram of specified body tissue.

Radiation Dose Rate: As a general rule, radiation dose rate measures the amount of ionizing (or nuclear) radiation to which an individual would be exposed or which he would receive per unit of time. It is usually expressed in roentgens, rads, or rems per hour or in multiples or submultiples of these units, such as multi-roentgens per hour. The radiation dose rate is commonly used to indicate the level of radioactivity in a contaminated area, at a given time, as distinct from the accumulated dose acquired over a period of time. For devices to measure radiation dose rate and accumulated dose, see Dosimetry.

Radiation Intensity: The amount of radiating energy striking upon or flowing through a given unit area, perpendicular to the radiation beam, in a given unit of time. The intensity of thermal radiation, for example, is generally expressed in calories-per-square-centimeter-per-second falling on a given surface at any specified period. As applied to a nuclear radiation, the term intensity is used to express the exposure rate at a given location, e.g., in roentgens.

Radioactivity: The spontaneous emission of radiation, generally alpha or beta particles, often accompanied by gamma rays, from the nucleus of an (unstable) isotope as it is converted (or decays) into the isotope of a different (daughter) element which may (or may not) also be radioactive. Ultimately, as a result of one or more stages of radioactive decay, a stable (nonradioactive) end-product is formed.

Radiological Contamination: The deposit of radioactive material on the surfaces of structures, areas, objects, animals, or persons following a nuclear explosion. This material generally consists of radioactive fallout in which fission products and other bomb debris have become incorporated with particles of dirt, etc. The removal of the radioactive particles from the exterior of such objects by washing or other means removes the contamination making objects and food products usable. Radiation only affects living animal cells.

Radiological Emergency Response Planning (RERP): Community planning to meet contingencies of peacetime radiological emergencies such as transportation accidents involving radioactive materials and incidents involving fixed nuclear facilities such as nuclear power reactors.

Readiness Criteria: The standards of performance considered necessary to carry out the mission of an emergency operational element or system.

Readiness Levels: See Civil Readiness Levels.

Readiness Status: The actual level of emergency readiness of a component or system at any given point in time.

Reclama: A request to a duly constituted authority to reconsider its decision or proposed action.

Recovery: Actions taken to dig out, assemble, identify, and inventory residual resources at damaged locations. Usually refers to a postattack action.

Regional Director (DOT EO): The designated head of the DOT EO Regional Office. As the senior transportation officer in the ODR Region, he represents the Secretary and serves as transportation staff officer to the Regional Director of ODR for all emergency transportation resource management activities.

Regional Emergency Transportation Center: The field facility at which is physically located a regional office of the Office of the Secretary of Transportation and such field organizations of the Federal transportation community as may elect to collocate there or provide liaison and support elements.

Regional Emergency Transportation Coordinator (RETCO): The representative of the Secretary of Transportation for emergency transportation planning matters in each of the FEMA and ODR Regions. The Director of Emergency Transportation, RSPA, is the cognizant staff officer for the Secretary of Transportation.

Regional Emergency Transportation Representative (RETREP): The principal assistant to the RETCO in planning, developing and coordinating DOT region-wide emergency transportation plans and programs.

Regional Isolation: The condition existing upon loss of communication with headquarters at the national level.

Regulated Carrier: Those carriers who have been granted governmental operating authority to transport nonexempt commodities by the regulatory agency governing the particular mode.

Regulated Routes: Highways which must be subjected to regulation because of hazardous conditions, special uses, or limited capacity in relation to demand.

Class "A": Highways which lie within an area contaminated by radio-activity that is hazardous to the life and health of highway users. These roads may be used with special guidance precautions and practices.

Class "B": Highways which are temporarily reserved exclusively for a special purpose, such as military or civil defense movements.

Class "C": Highways which are determined to have, or which are expected to develop, critical traffic capacity restrictions, and on which travel is generally limited to holders of "road use permits."

Relocatee: An individual who has been designated to report to a relocation site, an alternate headquarters or an emergency operating facility under a given set of conditions or when directed by competent authority.

Requirements (Transportation Resource Services): The estimates or forecasts of the amounts of civil transportation capacity that will be required under specific situations during stated future periods to carry out a particular program, or group of programs. Requirements include estimates of civil transportation that will be required by all programs - military, civilian industrial, governmental and foreign. (Includes facilities as well as services.)

Requirements (Transportation Supporting Resources): The estimates or forecasts of the amounts of resources that will be required under specific situations during stated future periods to carry out a particular program, or group of programs. Requirements include estimates of manpower, materials, products, fuels, power, etc., that will be required by all programs - military, civilian, industrial, governmental and foreign.

Requisition: Government action to demand or acquire property or services needed immediately for purposes of common defense and general warfare without regard to the willingness of the owners or suppliers to provide them, as distinguished from normal procurement. Requisitioning implies payment for fair value for the goods or services furnished as guaranteed by the Fifth Amendment to the Constitution.

Reserve Components of the Armed Forces: Reserve components of the Armed Forces of the United States are:

- (1) The Army National Guard of the United States
- (2) The Army Reserve
- (3) The Naval Reserve
- (4) The Marine Corps Reserve
- (5) The Air National Guard of the United States
- (6) The Air Force Reserve
- (7) The Coast Guard Reserve

In each reserve component there are three reserve categories, namely: a Ready Reserve, a Standby Reserve and a Retired Reserve.

Resources: The means available for carrying out a function or mission; Resources may be tangible, i.e., materials, persons, facilities, property, (transportation) services, and money, or intangible, i.e., economic capabilities, psychological qualities, educational potential, organizational ability, and the like.

Resource Crisis: See Crisis (Domestic).

Resource(s) Management. Those activities undertaken by government under statutory or emergency provisions of law, to mobilize and channel the manpower, money, materials and services of the Nation into activities needed to support the national security.

Road Capacity: The maximum traffic flow obtainable on a given roadway, using all available lanes, usually expressed in vehicles per hour or vehicles per day.

Road Use Permit: A legal permit issued to authorize specific travel over a designated route during a specified time. Sometimes referred to as a "Road Space Permit."

Road Space Permit: See Road Use Permit.

Sailing Interval: The time, in days, between sailings of successive similarly designated convoys.

Sanction: A measure, coercive by nature, directing a party to desist from or adjudicate an action or practice. More emphatic in purpose than an embargo.

Secondary Transportation: See Intrastate Transportation.

Security: A condition which results from the establishment of measures which protect designated information, systems, components and equipment against hostile persons, acts, or influences.

Service (Transportation): The utilization of the capacity of civil transportation.

Severe Damage (Nuclear Attack): There is a 50 percent probability that the facility is severely damaged and the contents or components may be salvageable.

Shielding: Any material or obstruction which can absorb, reduce, or divert shock or radiation and thereby protect personnel or material from the effects of a nuclear weapon, including radioactive fallout.

Ships Destination Room: The location where the day-to-day operations of national ships destination authorities are carried out.

Short Ton: A unit of weight of 2000 pounds; equivalent to 907.2 kilograms.

Solid Fuels: All forms of anthracite, bituminous, subbituminous, and lignite coals, coke, and coal chemicals produced in the coal-making process.

Special Cargo: Cargo which requires handling or protection due to its high value or sensitivity to abuse.

Special Weapons: A term sometimes used to indicate weapons grouped for special procedures, for security, or other reason. Specific terminology, e.g., nuclear weapons, guided missiles, is preferable.

Standard Metropolitan Statistical Area (SMSA): For data collection and reporting purposes, the Federal Government has defined areas including the central city and surrounding suburban territory for every important U.S. metropolitan area.

State Emergency Highway Traffic Regulation Center: See Emergency Highway Traffic Regulation.

State Emergency Resource Management Plans: Plans developed by individual States, under FEMA leadership and with the cooperation of Federal agencies, for the management of resources within the State under emergency conditions.

Statute Mile: A measure of lineal distance equal to 5,280 feet. To convert to U.S. Nautical Miles, multiply by .8684; to convert to kilometers, multiply by 1.6094. (See Nautical Mile).

Storage/Warehousing of Food Resources: The facilities for storing/warehousing all commodities and products, simple, mixed, or complements to such commodities or products, that are capable of being eaten or drunk, by either human beings or animals, irrespective of other uses to which such commodities or products may be put, at all stages of processing from the raw commodity to the products thereof in vendible form for human or animal consumption. For the purposes of this definition, the term "food resources" includes all starches, sugars, vegetable and animal fats and oils, cotton, tobacco, wool.

mohair, hemp, flax, fiber, and naval stores, but shall not include any such material after it loses its identity as an agricultural commodity or agricultural product.

Storage/Warehousing of Petroleum and Gas: The facilities for storing/warehousing:

(1) Crude oil and synthetic liquid fuel, their products, and associated hydrocarbons, and,

(2) Natural gas (including helium) and manufactured gas.

Stowage Factor: The number which expresses the space in cubic feet occupied by a long ton of any commodity as prepared for shipment, including all crating or packaging.

Strategic Air Warfare: Air combat and supporting operations designed to effect, through systematic application of force to a selected series of vital targets, the progressive destruction and disintegration of the enemy's war-making capacity to a point where he no longer retains the ability or the will to wage war.

Strategic Alert Cadre: Individuals or staff units of executive branch agencies who, with very short warning, can move to emergency operating facilities and conduct minimum essential functions of the agency until additional personnel arrive or can be recruited.

Strategic and Critical Material: A material required for essential uses in a war emergency, the procurement of which in adequate quantity, quality, or time, is sufficiently uncertain, for any reason, to require prior provision of the supply.

Strategic Warning: A notification that enemy-initiated hostilities may be imminent. Notification may be received from minutes to hours, to days, or longer, prior to the initiation of hostilities.

Suppressed (Network or System): A term used to indicate a reduced capability and/or capacity resulting from some external incident.

Surface Burst: A term used to describe the detonation of a nuclear weapon at the surface of the land or water or at a height above the surface less than the maximum radius of the fireball. A weapon detonated at or near the surface of the earth draws up material which will capture radioactive products that create downwind fallout hazards.

Survival Items: Those items which would be required, following a nuclear attack, to sustain life at a productive level and without which over a period of time great numbers of people might die or have their health so seriously impaired as to imperil the national survival effort.

Survival Measures: Disaster preparedness measures taken to minimize destruction and damage to human life and essential resources in the event of a nuclear attack, to include dispersal, evacuation, hardening, air and ground alert, and protective measures against radiological, biological and chemical contaminants.

Tactical Air Support: Air operations carried out in coordination with surface forces which directly assist land or naval battle. Includes "air support," i.e., all forms of support given by air forces to forces on land or sea.

Tactical Warning: Notification that the enemy has initiated hostilities. Such warning may be received any time from the launching of the attack until it reaches its target.

Telecommunication: Any transmission, emission or reception of signs, signals, writing, images, and sounds or information of any nature by wire, radio, visual, or other electromagnetic systems.

Tests: Tests are used to evaluate the existing capability and/or performance of a unit of government or component thereof, including systems, using established readiness criteria or standards.

Thermal Energy Yield (or Thermal Yield): The part of the total energy yield of the nuclear (or atomic) explosion which is released as thermal energy, usually within a minute or less. In an air burst, the thermal energy is, on the average, about one-third of the total energy of the explosion. For high altitude burst, roughly one-fourth of the total yield is released as thermal energy.

Thermal Radiation: Electromagnetic radiation emitted (in two pulses from an air burst) from the fireball as a consequence of its very high temperature; it consists essentially of ultra-violet, visible and infrared radiations. In the early stages (first pulse of an air burst), when the temperature of the fireball is extremely high, the ultraviolet radiation predominates; in the second pulse, the temperatures are lower and most of the thermal radiation lies in the visible and infrared regions of the spectrum. From a high altitude burst, the thermal radiation is emitted in a single short pulse.

Thermonuclear: An adjective referring to the process (or processes) in which very high temperatures are used to bring about the fusion of light nuclei, such as those of the hydrogen isotopes (deuterium and tritium), with the accompanying liberation of energy. A thermonuclear bomb is a weapon in which part of the explosion energy results from the thermonuclear fusion reactions. The high temperatures required to trigger fusion reactions are obtained by means of fission explosion. See Fission, Fusion.

Tight Rein: An exercise term. See Civil Readiness Level.



Topographic Map: A map which presents the vertical position of features in measurable form as well as their horizontal positions.

Total Casualties: As used in this document, this expression includes all those initially killed by direct effects of a nuclear detonation (killed first day), all who subsequently die of injuries so sustained (fatally injured), as well as those who recover from direct injuries due to blast, thermal or radiation effects.

Traffic Control (Highway): All measures, except those of a structural kind, which serve to control and guide traffic and to promote road safety.

Transattack: Generally, that period of time during an attack on the United States, its possessions and territories, although it may include only an attack on the United States, depending on the context of use.

Transportation Allocation, Priorities and Controls (TAPAC) Committee: An advisory committee appointed by the Secretary to advise the Director of the DOT EO in matters concerning allocation, priorities and controls. This committee will be composed of representatives of the principal Federal claimant and transportation operating and support agencies and may be varied in membership from time to time at the discretion of the Secretary.

Transportation Control Systems: Administrative procedures designed for operational application to civil transportation in order to maximize its contribution to the realization of national objectives.

Transportation Resource Management: Prudent application of transportation control systems, to the extent required, to insure optimum use of civil transportation - interstate and intrastate - in support of the national defense and the national interest, and to meet critical regional or national transportation demands.

Transportation Resource: The nation's total civil transportation system, i.e., all forms of civil transportation.

Transportation Resource Service: The utilization of the capacity of civil transportation.

Turnaround: The length of time between arriving at a point and departing from that point. It is used in this sense for turnaround of shipping in ports, and for aircraft refueling and rearming.

Turnaround Cycle: Used in conjunction with ships and aircraft and comprises the following: loading time at home; time to and from destination; unloading and loading time at destination; unloading time at home; planned maintenance time and, where applicable, time awaiting facilities.

Uniform Federal Regional Council Cities (UFRCC): Designated cities within the continental United States in which Federal departments and agencies have field activities and high-level representation engaged in social and economic programs requiring extensive interagency or intergovernmental coordination.

Unlimited National Emergency: A condition proclaimed by the President or by action of the Congress that requires extraordinary emergency measures to insure national safety and welfare. A defense or nondefense emergency depending upon the circumstances which created the condition.

UTM or Universal Transverse Mercator Coordinates: A method of describing the location of a place, facility, or installation by measurement of the position in meters north from the equator and east and west within zones six degrees in width.

War Air Service Program (WASP): The program designed to provide for the maintenance of essential civil air routes and services, and to provide for the distribution and redistribution of air carrier aircraft among civil air transport carriers after withdrawal of aircraft allocated to the Civil Reserve Air Fleet. (A responsibility of the Civil Aeronautics Board.)

War Air Service Program (WASP) Fleet: All U.S. civil air carrier aircraft, both fixed and rotary wing, under the economic authority of the Civil Aeronautics Board, after withdrawal of aircraft allocated to the Civil Reserve Air Fleet (CRAF). When specifically designated by the Secretary of Transportation, other civil air carrier and selected general aviation aircraft may be allocated to the WASP fleet.

Warning Terms: (Civil government usage.)

(1) Attack Warning: Indicates that an attack against this country has been detected and all feasible Federal civil agency actions should be directed toward the preservation and continuity of government and measures to preserve life and property.

(2) Termination of Attack Warning: Situation warrants movement of people from shelter where fallout conditions permit, but possibility of subsequent attack still exists.

Weight Ton: Calculated as a long ton (2240 pounds).

Yield (or Energy Yield): The total effective energy released in a nuclear (or atomic) explosion. It is usually expressed in terms of the equivalent tonnage of TNT required to produce the same energy released in an explosion. The total energy yield is manifested as nuclear radiation, thermal radiation, and shock (or blast) energy, the actual distribution being dependent upon the medium in which the explosion occurs and also upon the type of weapon. See Nuclear Radiation (Initial and Residual). Thermal Yield and Overpressure.

Zone (Time): A north-south band 15 degrees wide extending from 80 degrees north latitude to 80 degrees south latitude.

Zulu Time: Time at the prime meridian in Greenwich, England, or Greenwich Meridian Time; commonly referred to as Zulu Time used in the UTM System. (See Chapter 3.)



CHAPTER 3. WORLD WIDE TIME INDICATORS1. TABLE OF STANDARD TIME ZONES, ZONE DESCRIPTION AND DESIGNATION LETTERS

ZONE		DESCRIPTION		DESIGNATION LETTERS
7½W	to	7½E	----- 0	Z
7½E	to	22½E	----- -1	A
22½E	to	37½E	----- -2	B
37½E	to	52½E	----- -3	C
52½E	to	67½E	----- -4	D
67½E	to	82½E	----- -5	E
82½E	to	97½E	----- -6	F
97½E	to	112½E	----- -7	G
112½E	to	127½E	----- -8	H
127½E	to	142½E	----- -9	I
142½E	to	157½E	----- -10	K
157½E	to	172½E	----- -11	L
172½E	to	180	----- -12	M
<hr/>				
7½W	to	22½W	----- +1	N
22½W	to	37½W	----- +2	O
37½W	to	52½W	----- +3	P
52½W	to	67½W	----- +4	Q
67½W	to	82½W	----- +5	R
82½W	to	97½W	----- +6	S
97½W	to	112½W	----- +7	T
112½W	to	127½W	----- +8	U
127½W	to	142½W	----- +9	V
142½W	to	157½W	----- +10	W
157½W	to	172½W	----- +11	X
172½W	to	180	----- +12	Y

NOTES:

- (1) Greenwich Mean Time (GMT) is indicated by the suffix Z or Z.
- (2) The suffix indicates the correction (for description, see table) which must be applied to the time as expressed in order to convert to GMT.

Example:

Washington, D. C. is in longitude zone 67½ degrees to 82½ degrees West. If that city keeps normal (Standard) zone

time (Zone Description +5) the date-time group suffix will be R. To convert to GMT, add five hours to the indicated time. If that city keeps daylight saving time (Zone description +4), the suffix will be Q. To convert to GMT, add four hours to the indicated time.

CHAPTER 4. METRIC CONVERSION TABLESBASIC METRIC UNITS

<u>WEIGHT</u>		<u>LENGTH</u>	
1 kilogram	= 1000 grams	1 kilometre	= 1000 metres
1 hectogram	= 100 grams	1 hectometre	= 100 metres
1 dekagram	= 10 grams	1 dekametre	= 10 metres
1 gram	= 1 gram	1 metre	= 1 metre
1 decigram	= 0.1 gram	1 decimetre	= 0.1 metre
1 centigram	= 0.01 gram	1 centimetre	= 0.01 metre
1 milligram	= 0.001 gram	1 millimetre	= 0.001 metre

VOLUME

1 hectolitre	= 100 litres	1 decilitre	= 0.1 litre
1 dekalitre	= 10 litres	1 centilitre	= 0.01 litre
1 litre	= 1 litre	1 millilitre	= 0.001 litre

TEMPERATURE\*

0 °C	=	Freezing Point of Water (32 °F)
10 °C	=	A warm winter day (50 °F)
20 °C	=	A mild spring day (68 °F)
30 °C	=	Quite warm - almost hot (86 °F)
37 °C	=	Normal body temperature (98.6 °F)
40 °C	=	Heatwave Conditions (104 °F)
100 °C	=	Boiling Point of Water (212 °F)

\*Prefixes are not commonly used with temperature measurements as they are with those for weight, length and volume. Temperatures in degrees, Celsius (often referred to as Centigrade), as in the familiar Fahrenheit system, can only be learned through experience. The above may help to orient you with regard to temperatures you normally encounter.

COMMONLY USED CONVERSION FACTORSLINEAR MEASURES

1 inch  
= 0.0254 metre  
= 2.54 centimetres

1 foot  
= 0.333 yard  
= 12 inches  
= 0.3048 metres

1 yard  
= 3 feet  
= 36 inches  
= 0.9144 metre

1 metre (m)  
= 1.094 yards  
= 3.281 feet  
= 39.37 inches  
= 0.001 kilometre

1 kilometre (km)  
= 1,000 metres  
= 0.621 statute mile

1 statute mile  
= 1,760 yards  
= 1.609 kilometres

1 nautical mile  
= 6,080 feet  
= 1.15152 statute miles  
= 1.853 kilometres

SQUARE MEASURES

1 square inch  
= 6.452 square centimetres

1 square foot  
= 0.093 square metre

1 square yard  
= 9 square feet  
= 0.836 square metre

1 square metre  
= 1.196 square yards  
= 10.764 square feet  
= 1550 square inches

1 acre  
= 0.405 hectare  
= 4,840 square yards

1 hectare (ha)  
= 0.01 square kilometre  
= 2.471 acres

1 square kilometre  
= 0.386 square mile  
= 100 hectare

1 square mile  
= 2.589 square kilometre  
= 640 acres  
= 259 hectare



COMMONLY USED CONVERSION FACTORS  
(CONTINUED)

CUBIC MEASURES

1 cubic inch = 16.387 cubic centimetres	1 cubic foot = 28.317 litres = 7.4805 American gallons = 6.2288 Imperial gallons = 0.17811 American barrel = 0.028317 cubic metre
1 pint = 0.5683 litre	
1 litre = 1,000 cubic centimetres = 61.024 cubic inches = 1.7597 pints = 0.26417 American gallon = 0.21997 Imperial gallon = 0.035314 cubic foot	1 cubic metre = 35.315 cubic feet = 1,000 litres = 264.17 American gallons = 219.97 Imperial gallons = 6.2898 American barrels
1 hectolitre = 100 litres	1 kilolitre = 1,000 litres = 6.2898 American barrels
1 American gallon = 231 cubic inches = 3.7854 litres = 0.83268 Imperial gallon = 0.133681 cubic foot = 0.0238095 American barrel = 0.0037854 cubic metre	1 gross ton (shipping) = 100 cubic feet or 2.83 cubic meters of permanently enclosed space
1 American barrel = 9,702 cubic inches = 158.99 litres = 42 American gallons = 34.9726 Imperial gallons = 5.6146 cubic feet = 0.15899 cubic metre	1 ton of liquefied methane = approximately 16 barrels = approximately 50,000 cubic feet (1,400 cubic metres of natural gas, depending on methane content.)
1 Imperial gallon = 277.42 cubic inches = 4.5461 litres = 0.160544 cubic foot = 1.20094 American gallons = 0.028594 American barrel = 0.0045461 cubic metre	1 cubic yard = 0.765 cubic metre

COMMONLY USED CONVERSION FACTORS  
(CONTINUED)

WEIGHT

- 1 ounce (oz)  
= 28.35 grams
- 1 pound (lb)  
= 0.453592 kilogram  
= 0.009 hundredweight
- 1 kilogram (kg)  
= 2.20462 lb  
= 0.01 quintal
- 1 hundredweight  
= 112 lb  
= 50.802 kg
- 1 metric ton  
= 0.98421 long ton\*  
= 1.10231 short tons\*  
= 2,204.6 lb
- 1 English or long ton  
= 1.01605 metric tons\*  
= 1.12 short tons\*  
= 2,240 lb
- 1 short ton  
= 0.892857 long ton\*  
= 0.907185 metric ton\*  
= 2,000 lb

\*These conversions are based on the assumption that all weights are weights in air, which is the correct basis for computing bulk commercial quantities.

POWER AND HEAT UNITS

- 1 horsepower (hp)  
= 550 foot pounds  
= 0.746 kilowatt  
= 1.014 PFerdestaerke (PS) or Cheval Vapeur (CV)
- 1 PFerdestaerke (PS) or Cheval Vapeur (CV)  
= 542 foot pounds per second  
= 0.986 hp  
= 0.736 kw
- 1 kilowatt (kw)  
= 1,000 watts  
= 1.340 hp  
= 1.359 PS or CV  
= 737 foot pounds per second
- 1 foot pound per second  
= 0.00136 kilowatt  
= 0.00182 hp  
= 0.00184 PS or CV
- 1 therm  
= 100,000 British thermal units (Btu)  
= 25,200 kilocalories  
= 25.2 thermies  
= 29.3 kilowatt hours
- 1,000 kilocalories (large calories)  
= 3,968 Btu  
= 1.163 kilowatt hours  
= 1 thermie
- 1 kilowatt hour  
= 3,411 Btu  
= 1.340 hp hours  
= 859.6 kilocalories

APPROXIMATE CONVERSION FACTORSTO METRIC MEASURES

Symbol	When You Know	Multiply By	To Find	Symbol
<u>LENGTH</u>				
in	inches	2.5	centimetres	cm
ft	feet	30	centimetres	cm
ft	feet	.3	metres	m
yd	yards	0.9	metres	m
mi	miles	1.6	kilometres	km
<u>AREA</u>				
in <sup>2</sup>	square inches	6.5	square centimetres	cm <sup>2</sup>
ft <sup>2</sup>	square feet	0.09	square metres	m <sup>2</sup>
yd <sup>2</sup>	square yards	0.8	square metres	m <sup>2</sup>
mi <sup>2</sup>	square miles	2.6	square kilometres	km <sup>2</sup>
	acres	0.4	hectares	ha
<u>MASS (weight)</u>				
oz	ounces	28	grams	g
lb	pounds	0.45	kilograms	kg
	short tons (2000 lb)	0.9	ton/tonnes (1000 kg) (metric ton)	t
<u>VOLUME</u>				
tsp	teaspoons	5	millilitres	ml
Tbsp	tablespoons	15	millilitres	ml
fl oz	fluid ounces	30	millilitres	ml
c	cups	0.24	litres	l
pt	pints	0.47	litres	l
qt	quarts	0.95	litres	l
gal	gallons	3.785	litres	l
ft <sup>3</sup>	cubic feet	0.03	cubic metres	m <sup>3</sup>
yd <sup>3</sup>	cubic yards	0.76	cubic metres	m <sup>3</sup>
<u>TEMPERATURE (exact)</u>				
°F	Fahrenheit	5/9 (after subtracting 32)	Celsius temperature	°C
<u>ACCELERATION - POWER - FUEL PERFORMANCE - VELOCITY</u>				
ft/sec <sup>2</sup>	square feet/seconds	0.3048	square meters/seconds	m/sec <sup>2</sup>
in/sec <sup>2</sup>	square inches/ seconds	0.0254	square meters/seconds	m/sec <sup>2</sup>
hp/hrs	horsepower/hours	0.746	kilowatt hours	kw hrs
mpgal	miles/gallon	0.4251	kilometres/litres	km/l
mph	miles per hour	0.746	kilowatt hours	kw hrs

APPROXIMATE CONVERSION FACTORS  
(CONTINUED)

FROM METRIC MEASURES

Symbol	When You Know	Multiply By	To Find	Symbol
<u>LENGTH</u>				
mm	millimetres	0.04	inches	in
cm	centimetres	0.4	inches	in
m	metres	3.3	feet	ft
m	metres	1.1	yards	yd
km	kilometres	0.6	miles	mi
<u>AREA</u>				
cm <sup>2</sup>	square centimetres	0.16	square inches	in <sup>2</sup>
m <sup>2</sup>	square metres	1.2	square yards	yd <sup>2</sup>
km <sup>2</sup>	square kilometres	0.4	square miles	mi <sup>2</sup>
ha	hectares (10,000m <sup>2</sup> )	2.5	acres	
<u>MASS (weight)</u>				
g	grams	0.035	ounces	oz
kg	kilograms	2.2	pounds	lb
t	ton/tonnes (1000 kg) (metric ton)	1.1	short tons (2000 lb)	
<u>VOLUME</u>				
ml	millilitres	0.03	fluid ounces	fl oz
l	litres	2.1	pints	pt
l	litres	1.06	quarts	qt
l	litres	0.26	gallons	gal
m <sup>3</sup>	cubic metres	35	cubic feet	ft <sup>3</sup>
m <sup>3</sup>	cubic metres	1.3	cubic yards	yd <sup>3</sup>
<u>TEMPERATURE (exact)</u>				
°C	Celcius temperature	9/5 (then add 32)	Fahrenheit temperature	°F
<u>FUEL PERFORMANCE</u>				
kl/l	kilometres/litres	2.3521	miles per gallon	mpgal

CHAPTER 5. CHART SCALES AND EQUIVALENTS

Fractional Scale	Miles Per Inch		Inches Per Mile		Feet Per Inch
	Nautical	Statute	Nautical	Statute	
1:500	0.007	0.008	145.92	126.72	41.67
1:600	0.008	0.009	121.60	105.60	50.00
1:1,000	0.014	0.016	72.96	63.36	83.33
1:1,200	0.016	0.019	60.80	52.80	100.00
1:1,500	0.020	0.024	48.64	42.24	125.00
1:2,000	0.027	0.032	36.48	31.68	166.67
1:2,400	0.033	0.038	30.40	26.40	200.00
1:2,500	0.034	0.039	29.18	25.34	208.33
1:3,000	0.041	0.047	24.32	21.12	250.00
1:3,600	0.049	0.057	20.27	17.60	300.00
1:4,000	0.055	0.063	18.24	15.84	333.33
1:4,800	0.066	0.076	15.20	13.20	400.00
1:5,000	0.068	0.079	14.59	12.67	416.67
1:6,000	0.082	0.095	12.16	10.56	500.00
1:7,000	0.096	0.110	10.42	9.05	583.33
1:7,200	0.098	0.114	10.13	8.80	600.00
1:7,920	0.108	0.125	9.21	8.00	660.00
1:8,000	0.109	0.126	9.12	7.92	666.67
1:8,400	0.115	0.133	8.68	7.54	700.00
1:9,000	0.123	0.142	8.10	7.04	750.00
1:9,600	0.131	0.152	7.60	6.60	800.00
1:10,000	0.137	0.158	7.30	6.34	833.33
1:10,800	0.148	0.170	6.75	5.87	900.00
1:12,000	0.164	0.189	6.08	5.28	1,000.00
1:13,200	0.181	0.208	5.53	4.80	1,100.00
1:14,400	0.197	0.227	5.07	4.40	1,200.00
1:15,000	0.205	0.237	4.86	4.22	1,250.00
1:15,600	0.214	0.246	4.68	4.06	1,300.00
1:15,840	0.217	0.250	4.60	4.00	1,320.00
1:16,000	0.219	0.253	4.56	3.96	1,333.33
1:16,800	0.230	0.265	4.34	3.77	1,400.00
1:18,000	0.246	0.284	4.05	3.52	1,500.00
1:19,200	0.263	0.303	3.80	3.30	1,600.00
1:20,000	0.274	0.316	3.65	3.17	1,666.67
1:20,400	0.279	0.322	3.57	3.11	1,700.00
1:21,120	0.289	0.333	3.45	3.00	1,760.00
1:21,600	0.296	0.341	3.38	2.93	1,800.00
1:22,800	0.312	0.360	3.20	2.78	1,900.00
1:24,000	0.329	0.379	3.04	2.64	2,000.00
1:25,000	0.342	0.395	2.92	2.53	2,083.33
1:31,680	0.434	0.500	2.30	2.00	2,640.00
1:48,000	0.658	0.758	1.52	1.32	4,000.00
1:50,000	0.685	0.789	1.46	1.27	4,166.67
1:62,500	0.856	0.986	1.17	1.01	5,208.33
1:63,360	0.868	1.000	1.15	1.00	5,280.00

Fractional Scale	Miles Per Inch		Inches Per Mile		Feet Per Inch
	Nautical	Statute	Nautical	Statute	
1:75,000	1.028	1.184	0.97	0.85	6,250.00
1:96,000	1.315	1.515	0.76	0.66	8,000.00
1:100,000	1.370	1.578	0.73	0.63	8,333.33
1:125,000	1.713	1.973	0.58	0.51	10,416.67
1:126,720	1.737	2.000	0.57	0.50	10,560.00
1:200,000	2.741	3.157	0.36	0.32	16,666.67
1:250,000	3.426	3.940	0.29	0.25	20,833.33
1:253,440	3.473	4.000	0.28	0.25	21,120.00
1:400,000	5.482	6.313	0.18	0.16	33,333.33
1:500,000	6.853	7.891	0.15	0.13	41,666.67
1:506,880	6.947	8.000	0.14	0.13	42,240.00
1:750,000	10.279	10.837	0.10	0.08	62,500.00
1:1,000,000	13.705	15.783	0.07	0.06	83,333.33
1:1,013,760	13.894	16.000	0.07	0.06	84,480.00
1:1,500,000	20.558	23.674	0.05	0.04	125,000.00
1:1,680,000	23.025	26.515	0.04	0.04	140,000.00
1:2,000,000	27.411	31.565	0.03	0.03	166,666.67
1:2,500,000	34.264	39.457	0.03	0.03	208,333.33
1:3,000,000	41.117	47.348	0.02	0.02	250,000.00
1:3,500,000	47.970	55.240	0.02	0.02	291,666.67
1:4,000,000	54.823	63.131	0.02	0.02	333,333.33
1:4,500,000	61.675	71.023	0.01	0.01	375,000.00
1:5,000,000	68.528	78.914	0.01	0.01	416,666.67
1:6,000,000	82.234	94.697	0.01	0.01	500,000.00
1:7,000,000	95.940	110.479	0.01	0.01	583,333.33
1:8,000,000	109.645	126.262	0.01	0.01	666,666.67
1:9,000,000	123.351	142.045	0.01	0.01	750,000.00
1:10,000,000	137.057	157.828	0.01	0.01	833,333.33
1:11,000,000	150.762	173.611	0.01	0.01	916,666.67
1:12,000,000	164.468	189.393	0.01	0.01	1,000,000.00
1:13,000,000	178.174	205.176			1,083,333.33
1:14,000,000	191.880	220.959			1,116,666.67
1:15,000,000	205.585	236.742			1,250,000.00
1:16,000,000	219.291	252.525			1,333,333.33
1:17,000,000	232.996	268.308			1,416,666.67
1:18,000,000	246.702	284.090			1,500,000.00
1:19,000,000	260.408	299.873			1,583,333.33
1:20,000,000	274.113	315.656			1,666,666.67
1:21,000,000	287.819	331.439			1,750,000.00
1:22,000,000	301.525	347.222			1,833,333.33
1:23,000,000	315.231	363.005			1,916,666.67
1:24,000,000	328.936	378.787			2,000,000.00
1:25,000,000	342.642	394.570			2,083,333.33
FORMULAS	Scale 72.962	Scale 63.360	72.962 Scale	63.360 Scale	Scale 12

SUPPLEMENTAL SHEET FOR ADDITIONAL TERMS AND ABBREVIATIONSDEFINITION OF CRUDE OIL AND ITS PRODUCTS

The following is a list of definitions of some of the commonly used terms as defined by the United States Department of Energy (March 1979).

1. Aviation Fuel (Kerosene-Type). A relatively low freezing point distillate of the kerosene-type includes all kerosene products with an average gravity of 40.7° API and 10 percent to 90 percent distillation temperatures of 390° F. to 470° F. covered by ASTM D1655 specifications, and including JP-5 and other fuels meeting military specifications (MIL-T-5624G Amend. 1).
2. Aviation Fuel (Naphtha-Type). All fuels in heavy naphtha boiling range with an average gravity of 52.8° API and 10 percent to 90 percent distillation temperatures of 210° F. to 420° F., including JP-4 and other fuels meeting military specifications MIL-F-5624 and MIL-T-5624G, used for turbojet and turboprop engines, primarily by the military.
3. Aviation Gasoline. All of the various grades of aviation gasoline as defined in ASTM D910-70.
4. "Aviation Fuels." Means aviation fuel (kerosene-type), aviation fuel (naphtha-type), and aviation gasoline.
5. Gasoline. All of the various grades, other than aviation gasoline, of refined petroleum naphtha which, by its composition, is suitable for use as a carburant in internal combustion engines.
6. "Greases." All lubricating greases which are solid to semi-fluid products comprising a dispersion of a thickening agent in a liquid lubricant.
7. Kerosene. All refined petroleum distillate suitable for use as an illuminant when burned in a wick lamp.
8. Lubricant Base Oil Stocks. All refined petroleum products that are primary components used in the compounding and blending of lubricants and greases including but not limited to bright stocks, solvent neutrals, coastal oils, pale oils and red oils.
9. Lubricants. All grades of lubricating oils that have been blended with the necessary lubricating oil composition in a form that is designed to be used for lubricating purposes with such lubricating oils comprised of greater than ten (10) percent by weight of refined petroleum products.
10. "Middle Distillates." Numbers 1 and 2 heating oils, numbers 1-D and 2-D diesel fuels, kerosene and aviation fuels.

11. Natural Gas Liquids. A mixed hydrocarbon stream containing, in whole or in substantial part, mixtures of ethane, butane (iso-butane and normal butane), propane or natural gasoline.

12. No. 1 Heating Oil. Grade No. 1. A light distillate intended for use in burners of the vaporizing type in which the oil is converted to a vapor by contact with a heated surface or by radiation. High volatility is necessary. Straight run kerosene is a generally good description of the product which is predominantly used in space heaters.

13. No. 1-D Diesel Fuel. Diesel fuel grade No. 1. Comprises the class of volatile fuel oils from kerosene to the middle distillates. Fuels of this grade are applicable for use in high-speed engines involving frequent and relatively wide variations in loads and speeds, and where abnormally low temperatures are encountered.

14. No. 2 Heating Oil. Heating oil grade No. 2. A heavier distillate than grade No. 1. It is intended for use in atomizing type burners which spray the oil into a combustion chamber where the tiny droplets burn while in suspension. This grade of oil is used in most home burners that have central heating and in many medium capacity commercial industrial burners where its ease of handling sometimes justifies its higher cost over the residual fuels.

15. No. 2-D Diesel Fuel. Diesel fuel grade No. 2. Included in this grade are distillate gas oils of lower volatility. These fuels are applicable for use in high-speed engines involving relatively high loads and uniform speeds, or in engines not requiring fuels having the higher volatility specified for Grade No. 1-D.

16. No. 4 Fuel Oil. Fuel oil grade No. 4. Usually a light residual, but it sometimes is a heavy distillate. It is intended for use in burners equipped with devices that atomize oils of higher viscosity than home burners can handle. In all but extremely cold weather it requires no preheating for handling.

17. No. 4-D Diesel Fuel. Diesel fuel grade No. 4. Covers the more viscous distillates (middle distillates) and blends of these distillates with residual fuel oils. These fuels are applicable for use in low and medium speed engines involving sustained loads at constant speed, such as large, heavy, stationary type diesel engines.

18. No. 5 Fuel (Light): A residual fuel of intermediate viscosity for burners capable of handling fuel more viscous than Grade No. 4 without preheating. Preheating may be necessary in colder climates.

19. No. 5 Fuel (Heavy): A residual fuel more viscous than Grade No. 5 (Light) and is intended for use in similar service, that is, commercial, industrial, and large apartment houses. Mostly it requires preheating, particularly in colder climates.



20. No. 6 Fuel Oil. Sometimes referred to as "Bunker C" is a high viscosity oil used mostly in commercial and industrial heating. It requires preheating in the storage tank to permit pumping and additional preheating at the burner to permit atomizing. The extra equipment and maintenance required to handle this fuel usually does not permit it to be used in small installations.

21. Octane Number. Number derived from the sum of Research (R) and Motor (M) octane numbers divided by 2. Described in ASTM "Standard Specifications for Gasoline" D439-70 and subsequent revisions, and ASTM test methods D2699 and D2700.

22. Propane. A hydrocarbon whose chemical composition is predominantly  $C_3H_8$ , whether recovered from natural gas or crude oil.

23. "Residual Fuel Oil." Means No. 4 fuel oil, No. 4-D diesel fuel, those fuel oils commonly known as ASTM Grades No. 5 and No. 6 fuel oils, heavy diesel, Navy Special Bunker C and all other fuel oils which have a fifty percent boiling point over 700° F. in the ASTM D86 standard distillation test.

END





